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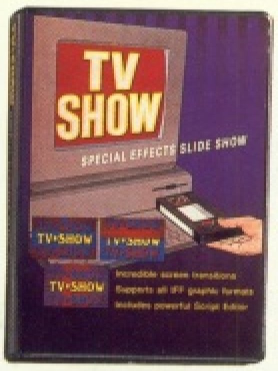
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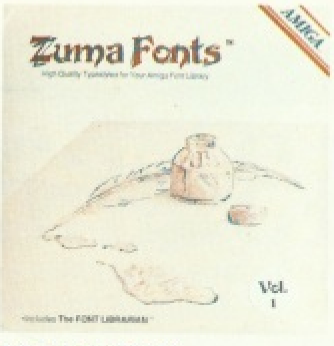
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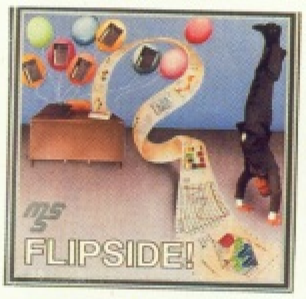
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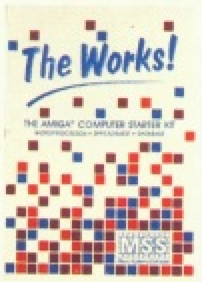
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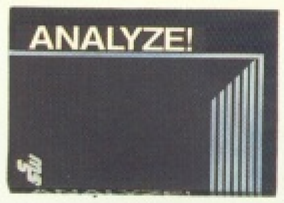
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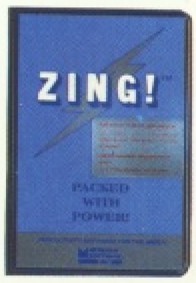
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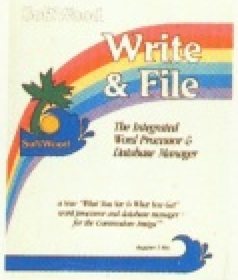
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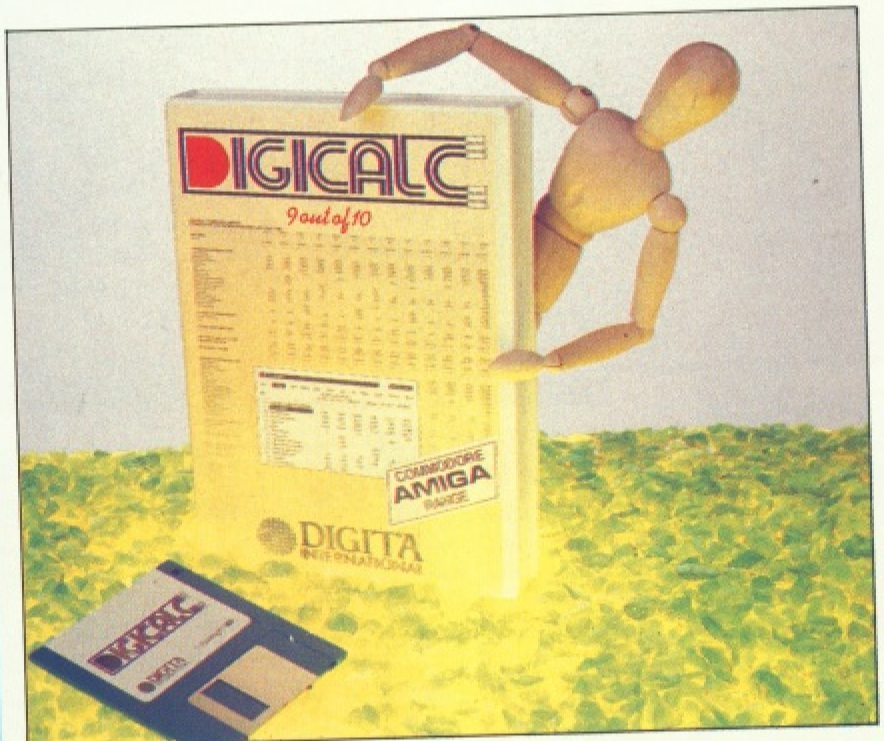
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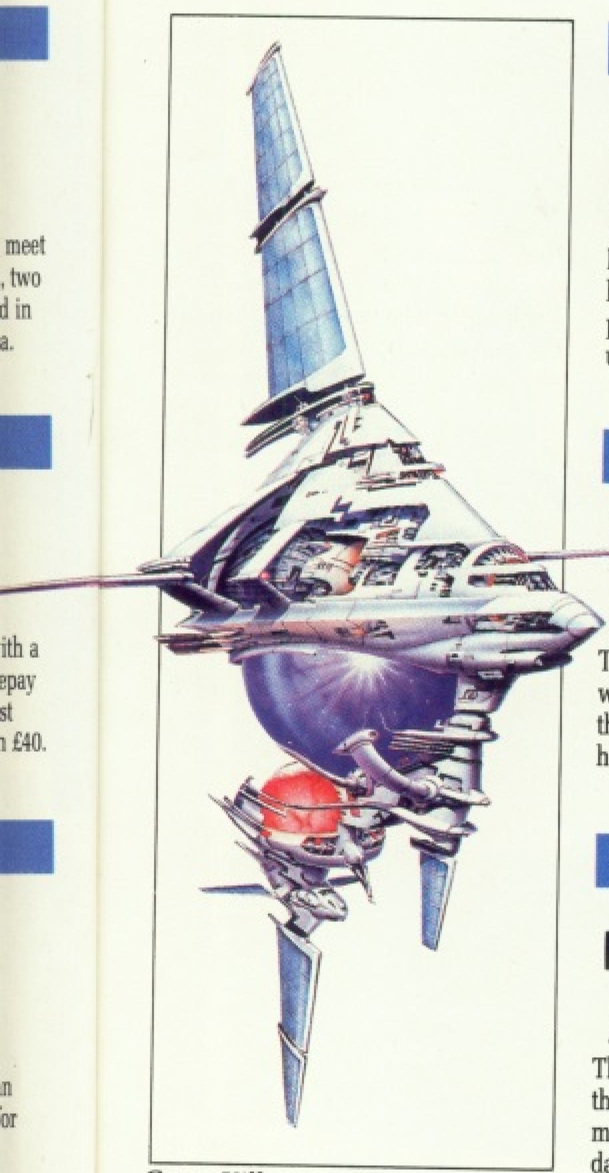
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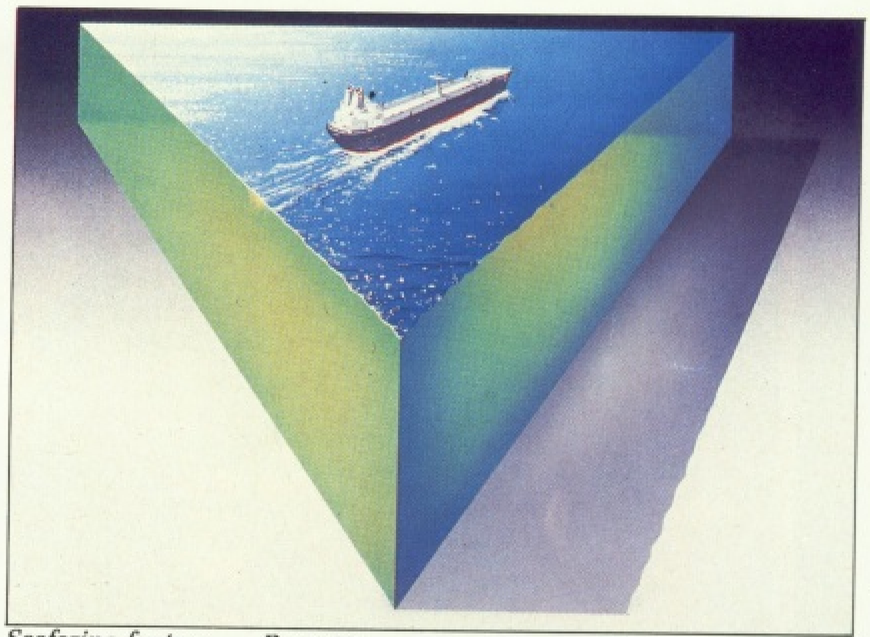
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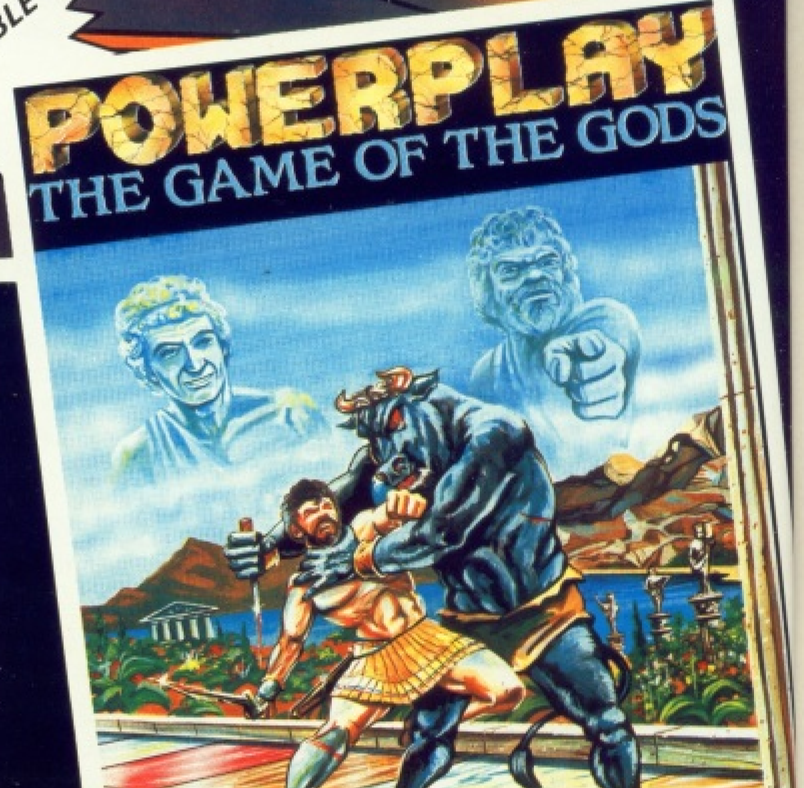
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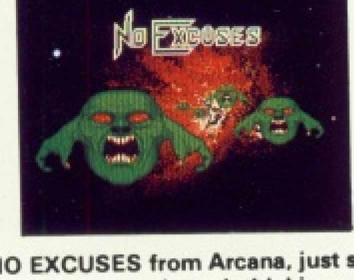


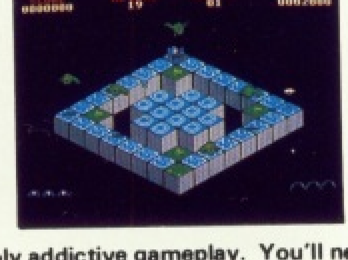
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Commodore has all the Drams it needs

WHILE other computer manufacturers suffer from the memory chip shortage, Commodore now controls about 40 per cent of the world's independent Dram production.

"The dearth of Dram is creating supply problems for many of the industry's leading manufacturers – no Dram, no computers", said Commodore spokesman Rob Wait, "but no such supply problems are affecting Commodore deliveries.

"We initiate enough forward buying contracts each year to assure supply of all components, including the vital memory chips. Where many companies are floundering to fulfil their orders, Commodore has a sound and regular supply of machines.

"We are still building PCs and Amigas at a time when several other manufacturers are struggling to keep their plants turning over.

"Traditionally the Dram market has swooped from shortage to glut with monotonous regularity. But the present shortage would appear to be more than just a glitch in the manufacturing supply routes, and looks set for another 12 months.

"As long as the boom in Far Eastern clone manufacturing continues – together with the trend toward larger, more expensive memory chips – it would appear that some manufacturers will be breaking promises rather than sales records.

"However, Commodore won't be one of them".

Commodore managing director Steve Franklin added: "It concerns me that some of the so-called captains of our industry continue to launch new products and make new promises without having the ability to deliver.

"This is harmful not only for themselves but also for the industry as a whole.

"Difficulties – such as supply problems – highlight the true calibre of large multinational companies. In this case they enhance the strength and ability of large multinational corporations such as Commodore in long and short term strategic and operational planning".



Joystick shapes up nicely

JUST released is the latest joystick from Konix (0495 350101). "The Navigator is the best joystick we've ever produced", says Konix director Sandra Holloway. "It's certainly the best looking one on the market.

"I feel the Navigator is likely to appeal to more people than the Speed King, being ergonomicaly designed with a pistol grip handle so that it can be held in either the right or left hand.

"We spent a lot of money researching the feel of the joystick so we could be sure the final shape was the one the average person would feel most comfortable with".

BT faces backlash

OFTEL, the telecommunications watchdog, has revealed it has received a number of complaints about recent Prestel price increases.

"The complaints came primarily from home computer users who tend to access the system in the evenings and at weekends", said an OFTEL spokesman.

"We have asked British Telecom for an explanation of the basis for the new charges and have also raised the question of quality of service, which many people say has deteriorated significantly".

Duff discs discovered

CHEAP counterfeit copies of the new Commodore discs have been discovered on sale in London's West End just weeks after the official launch.

Imitation packaging with the Commodore logo is designed to dupe the public – "but the poor quality discs would only fool and disappoint first time buyers", said Ivor Norkett, business manager for RPS (0582 867222) which supplies the genuine discs.

His company has the exclusive licensing agreement to market Commodore branded 5.25in and 3.5in discs in the UK. He told *Amiga Computing*: "Our evidence suggests that this is a localised problem and we have taken steps to eradicate it.

"Initial tests show that these pirate discs are totally inferior in quality and performance, and users are going to experience problems.

"We will ensure the good name of RPS and Commodore is protected from this kind of con trick. The speed of this imitation is a determined bid to cash in on a vast consumer market.

"Sales of Commodore brand discs in Germany last year totalled more than 10 million and the total European market this year is expected to exceed 20 million".

Drive on education

FRESH initiatives in Commodore's drive into the education market have seen the company courting more distributors.

Negotiations are also reported between Commodore and both the Open University and the National Union of Students for the supply of Commodore hardware.

Northumberland is the latest LEA to take on Amigas – with Kent, West Sussex and North Yorkshire also showing keen interest. An attraction is the saving of nearly 50 per cent on the price to LEAs of the Amiga 2000 at just over £1,000.

Sales manager Brian Talbot told *Amiga Computing* that plans are going ahead to build on the success of the Commodore Education Roadshow which has been touring the country in recent months.

The roadshow winds up at the Middlesex Polytechnic on December 6 and 7.

"Our plans for next year include at least three major education seminars – probably in London, Manchester and Edinburgh", said Talbot.

Information on tap at Christmas Show

COMMODORE users' group ICPUG celebrates its 10th anniversary at the Commodore Christmas Show to be held at London's Novotel from November 18 to 20.

To mark the occasion, well-known members of ICPUG will be giving daily presentations at the Commodore Theatre during the show.

These include Midi for beginners by David Annal, a history of Commodore and computer communications by John Collins, Amiga graphics by Richard Ahearn and David Annal, Comal by Will Light, databases by Simon Tranmer and a general question-and-answer session conducted by experts from the ranks of ICPUG.

Microtext (0705 595694) is launching The Upgrader, a £34.80 product which allows C64 Microtext owners to use their teletext adapters with an Amiga.

"With such a large installed user base and as most serious C64 owners are buying Amigas there was an obvious need for The Upgrader", said a spokesman.

"We'll also be demonstrating a tuner that enables users to watch TV on their monitor when their computer is not in use.

"Many Amiga owners have colour monitors and by simply connecting the TV tuner and an aerial can obtain superb colour pictures together with sound", said a spokesman. Price is expected to be in the region of £50.

Power Computing (0234 52207) is releasing Video Magic, a new audio visual presentation system for all Amigas.

Developed in the style of Pro Sound Designer it has the familiar buttons and other features to make the program user friendly.

"Anyone will be able to string together a professional demo or presentation in minutes rather than days", said Power Computing's Ken Browning.

"The program features full support for all Amiga graphic modes, animation, sound effects control, multiple transitional effects, synchronised digitised sound and an automatic script language.

"We also plan to give support to external synchronisation, allowing for multiple VDU displays, video walls and so forth". Price £69.95.

From the same source, Pro Sound Gold is a new upgraded version of the best-selling sound sampler/editor which will be available at the show along with two Pro Sound accessory programs – Pro Midi Plus and Pro Sound Toolkit.

Price including hardware is £79.95, with Pro Sound coming down to £59.95.

Pro Midi Plus, which works with all samplers, allows samples to be played as midi voices from an external midi source or MM5000 keyboard. Price £34.95.

Pro Sound Toolkit gives programmers all the tools to control digitised sound effects from within their own programs. Examples are given in Basic, C and assembler codes. Price £34.95.

Amiga Music System is a complete package for those who want to explore sound on their machine – it contains an MM5000 keyboard, Pro Sound Gold, Pro Midi Plus and MM3000 midi interface for £199.

The launch of Lombard/RAC Rally from Mandarin Software (0625 878888) will be marked by the appearance at the show of a real Ford rally vehicle.

A faithful re-enactment of the famous cross country rally, the game puts players in the driving seat of a 300bhp Group A Ford Sierra RS Cosworth. Price £24.95

Frontier's mega deal

A DEAL with the Supra Corporation has given Frontier Software (0423 67140) the sole UK import rights to the US-made Amiga hard disc drives.

SupraDrives will be available in 20, 30 and 60Mb capacities for the Amiga 500, 1000 and 2000.

The systems include hard disc drive, SCSI expansion port and the capability to expand the Amiga 500's ram memory.

SupraDrive plugs directly into the expansion port on the A500 and A1000 and internally on the A2000.

The data channel is capable of burst data transfers of over 250k a second.

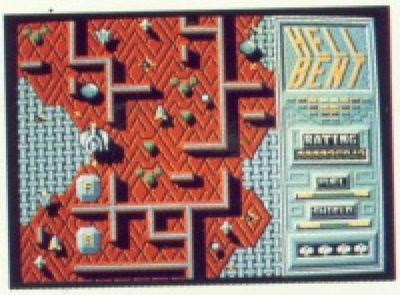
The A500 version interface can take plug-in ram modules with capacities of 1 or 2MB of fast ram. These ram boards and the A500 hard disc are powered by the SupraDrive's own power supply, preventing potential overloading problems.

Both the A500 and A1000 SupraDrives offer full Amiga bus pass-through, making them compatible with ram boards, digitisers and the Amiga bridge board.

The software plus hard disc utilities can partition the drive into as many as five separate sections, auto boot from hard disc, provide the option of using the new CBM file system on some partitions while using the old system on others, and the ability to erase individual partitions without affecting those remaining.

Price of A500 and A1000 drives ranges from £649.95 to £1,199.95, A2000 drives from £629.95 to £999.95.

Hellbent for success



THIRD 16 bit release from Novagen (021-449 9516), following Mercenary and Backlash, is Hellbent by Paul Woakes.

Novagen's Bruce Jordan told *Amiga Computing*: "This is rather more than your average scrolling shoot-'em-up. It received a fantastic consumer reaction at the recent PC Show and we've every confidence it will be a mega hit this Christmas". Price £19.95.

Strike speeds fax plans

BECAUSE of the recent postal dispute which brought UK business to a shuddering halt, plans have been rushed through to make fax available on MicroLink, Britain's fastest growing electronic mail service.

It now means that anyone with an Amiga, phone and modem can send a message to a fax machine anywhere in the world.

Head of MicroLink Derek Meakin said: "We brought forward our plans for fax facilities as a result of the damage being done to Britain's trade and commerce by the postal dispute.

"We are offering subscribers a multiple fax service – as with our telex facilities they will be able to send a message to up to 500 addresses simultaneously.

"We know this instant service will be warmly welcomed by companies that need to get information into the hands of their customers without delay".

Fax follows a number of new services being launched on MicroLink. They range from financial and business management databases to the cult multi-user adventure game Shades.

Building on success

COMMODORE is riding high with the success of the A500. The company has been there before with the Pet and the C64. However in the '80s they failed to follow up their advantage. Plans to take the Amiga into the 1990s will ensure that there is a strong upgrade path to be followed.

Early in the New Year we should see the AT bridge board. This offers the same high degree of PC compatibility available from the old Sidecar for the A1000 and A2088 board for the A2000, but gives increased performance with an Intel 80286 processor.

The hardware is finished and the software is undergoing final testing.

There will be two versions of the 1008 by 1024 "Headly" monitor, the previously announced A2024 and an as yet unnamed large screen version which is not being manufactured or marketed by Commodore but using the same custom chips under licence. It will work with any 1 Mb Amiga, but is primarily aimed at the high end workstation market.

For the summer there will be an improved A2000 with a 68020 on the main circuit board and an improved A500 equivalent with 1Mb as standard and a SCSI hard disc controller built in. This will allow you to add a compatible drive for around £300 at today's prices.

If Commodore's past record is anything to go by there may well be long delays between the products being finished and shipped. It is certainly not worth waiting for them.

Spreading the Plague

PIONEER Plague, the first computer game to incorporate a palette of more than 4,000 colours, had a worldwide launch on the same day in the UK, the United States, France, Germany and Australia.

These countries are all strongholds of the Commodore Amiga, the only machine to offer the Hold and Modify (HAM) graphics facility which has enabled the breakthrough software to be developed.

HAM allows any or all of its 4,096 colours to be displayed on screen at one time, but because it uses up so much processor time, it had never before been successfully incorporated in a game.

The unique title is a joint venture between leading UK software house Mandarin and US based Terrific Software, a division of Antic.

Pioneer Plague has been written by Bill Williams, one of the world's top Amiga programmers and author of Mindwalker from Commodore and Sinbad the Sailor from Cinemaware.

The game features scrolling in eight directions, human-like digitised speech and a variety of original music scores in stereo.

Pioneer Plague will be priced in the UK at £24.95.

Ariadne Beebulator

FIRST details are emerging of the BBC emulator for the Amiga. Unlike most versions of BBC Basic for non-Acorn computers, the Amiga version implements operating system calls. This makes it much more flexible and means that many of the simpler programs written for the BBC Micro will run with few changes necessary.

A 6502 emulator is included, but because the code is interpreted and translated into 68000 it runs very much slower than on a BBC Micro. The Basic has been efficiently coded in 68000 and so runs closer to full speed, with some of the graphics routines outstripping the 8 bit machine quite significantly.



Lurking bug lands 1.3 on the BLink

JIM BUTTERFIELD reporting from Canada

SEASON's greetings to all my European friends in Commodoreland – may you find your heart's desire, whether hardware or software, in your stocking on Christmas morning.

The World of Commodore show has been an annual December event in Toronto, Canada, for the past seven years. Now WOC seems to be undergoing a population explosion – not only was a similar show held in Philadelphia in November but new ones are planned for Detroit next September and Los Angeles around the same time.

The 2090A hard disc controller, which differs from the 2090 in its autoboot capability, is now shipping. The new year will see a further step in the evolution of this series – the 2091.

It might be described as a 2090A with greater expansion capability, but it seems to be almost an expansion compendium.

With the 2091 you'll be able to have the hard disc controller plus expansion ram – auto configuration of course – for your system plus an extra 3.5in floppy drive.

By the time you read this, 1.3 should be out and about. At the time of writing, however, it's still not available to the average user.

At the last moment John Toebes, of BLink fame, discovered and reported a previously unknown bug, and 1.3 had to be pulled back for one more version to be produced.

Look for this final version to be identified as Workbench 24.20 – developers would call this the Omega 10 version. Dealer training is under way and I'm told that the documentation package is splendid.

Since the new 1.3 system draws on the concepts of two independent developments – ConMan and CShell – it might be thought that these earlier packages would fade away as the new release comes in.

Not so. The shareware program Conman, by William S Hawes, is said to be ready for a new release. And the free program CSH by Matt Dillon has just been released as version 2.10. The CShell documentation recommends use of either the new 1.3 console device or Conman.

Word Perfect, the premium word processor on the Amiga, has a new version which uses some of the 1.3 printer driver features.

This comes as a surprise, to me at least, since Word Perfect uses its own extensive set of printer drivers.

Be that as it may, the newest version – 4.1 – does take advantage of some 1.3 features. Be careful, however, in converting this to the true 1.3 system – the LIBS directory will need to contain a mix of the revised WP overlays and the new 1.3 system library items.

See us at the COMMODORE CHRISTMAS SHOW Nov. 18-20 - Stand 3

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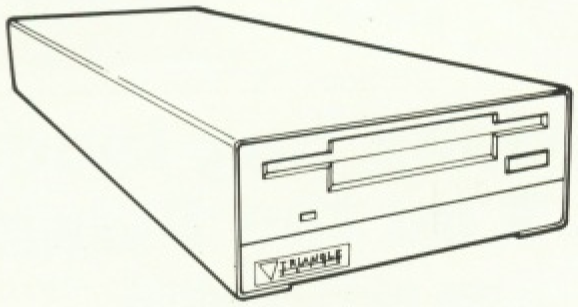
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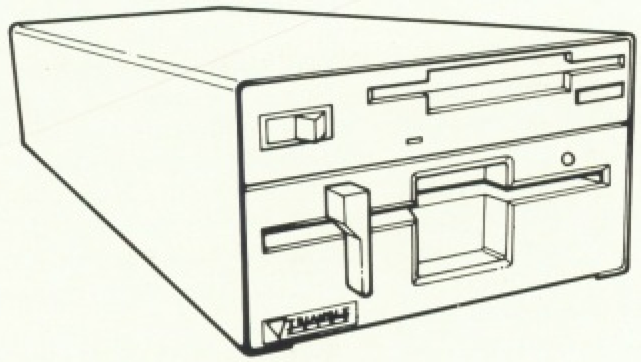
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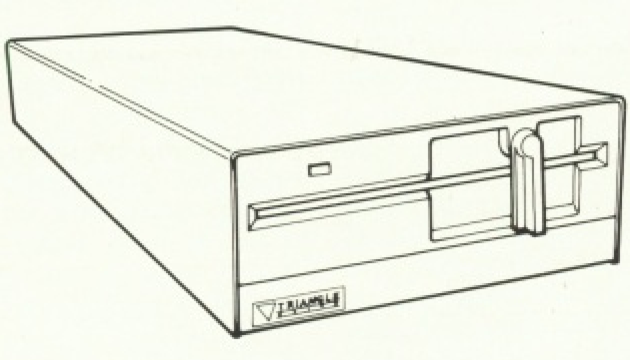
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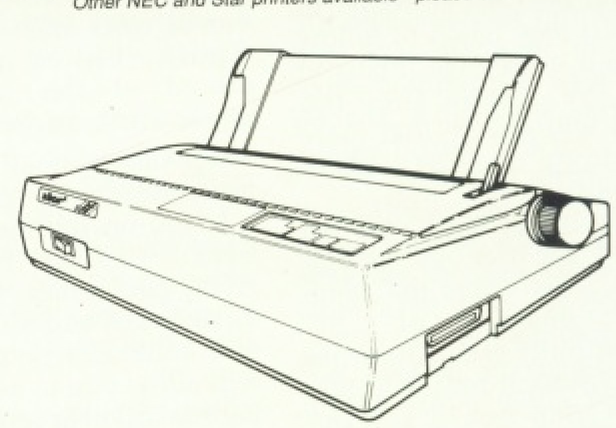


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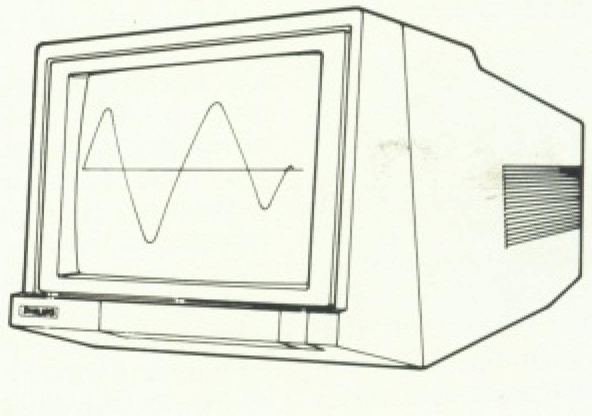


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An objective discussion

Sam Littlewood looks at three tools for improving your library of objects in four Amiga modelling packages

THE Amiga is blessed with several interesting modelling, animation, and rendering packages which have produced many stunning animation and rendering packages different strengths and weaknesses: Sculpt-3d has a good modelling interface, not Turbo Silver's strong point. Turbo Silver, however, has a very fast ray tracer.

The difficulty is that each package has its own format for storing data, making objects designed in one package useless for another, and not allowing the best features of each package to be used together on one project. Even the Amiga's IFF standard is not comprehensive enough to allow for 3D models.

Interchange sets out to solve the problem of incompatible data, allowing conversion of information



between the various formats. The other two packages reviewed are libraries of objects that with the help of Interchange can be included in mâsterpieces. The Object Disc is a general collection of objects and scenes, while Fancy Fonts is a set of three solid fonts.

Interchange is supplied in a small black ring binder containing the documentation, the core software and modules that allow conversion between Videoscape 3D and Sculpt-3d. Additional modules can be bought which extend the system to cope with Turbo Silver and Forms in Flight. The documentation is short, but it does explain how to use the software. Each expansion module comes with additional documentation detailing the particular quirks of the supported system.

The software has an Intuition interface. The core program puts up a window from which all control takes place. This core program alone cannot do anything, the modules that handle the individual formats being separate programs. The modules for the data formats being used must be started as separate processes. As soon as a module is run the appropriate format appears as an option in the main window.

Interchange does not completely solve the problem of incompatible data; it can only transfer objects, not complete scenes or descriptions of motion. It is not possible to produce an animation in one system and then just switch over to another.

DUE to the different ways in which the various systems describe objects, several of the possible conversions between packages will lose information. For example, Videoscape 3D has 16 colours which can be either matte or shiny. A multi-hued reflective object from Sculpt-3d is likely to have a different appearance in Videoscape.

The Intuition interface is good. A file requestor appears on the left hand side of the window, allowing you to browse through discs selecting files. The names of the selected files to be converted go into the window on the right hand side.

If any of the conversion modules have been run, entries will appear in a list at the bottom, showing the available output formats. Having picked one, the conversion can be started by hitting the large suitably labelled button.



Fancy Fonts images in Sculpt

The type of each selected file is determined automatically, and if one of the conversion modules recognises it, the conversion starts. The output filename is derived from the input with a suitable extension added. If an output file of that name exists already it is renamed to x.BACKUP.

CONVERSION is not instantaneous. A running report of progress is written to the bottom right of the window. In addition a large STOP button appears, allowing the process to be aborted.

Within the limitations mentioned above, the package is extremely effective. It does require some knowledge of how each system defines objects to be able to make good choice of colours and structure.

I am still learning how to use Interchange to the best effect, but it is something I am not going to let anybody take away from me. The package is not a complete solution to the problem of incompatible data, but it is approaching the best possible. You have to be prepared to tweak the objects around a bit after conversion. However, if you are using more than one of the Amiga modelling systems, and you have not already bought Interchange, get it.

Interchange Object Disc 1 is a collection of assorted objects and scenes for Sculpt-3d and Videoscape 3D. The Videocscape objects are the shuttle, a TIE fighter and a set of office equipment produced with the forthcoming Modeller-3D. This ▶

REPORT CARD

Interchange
Syndesis/HB Marketing 0895 444433
£49.95 Interchange. Modules £19.95 each

USEFULNESS
The number of people who have more than one rendering tool is limited, for them this is a necessity

EASE OF USE
Well designed, written and presented. The concepts of 3D modelling are still mindbending.

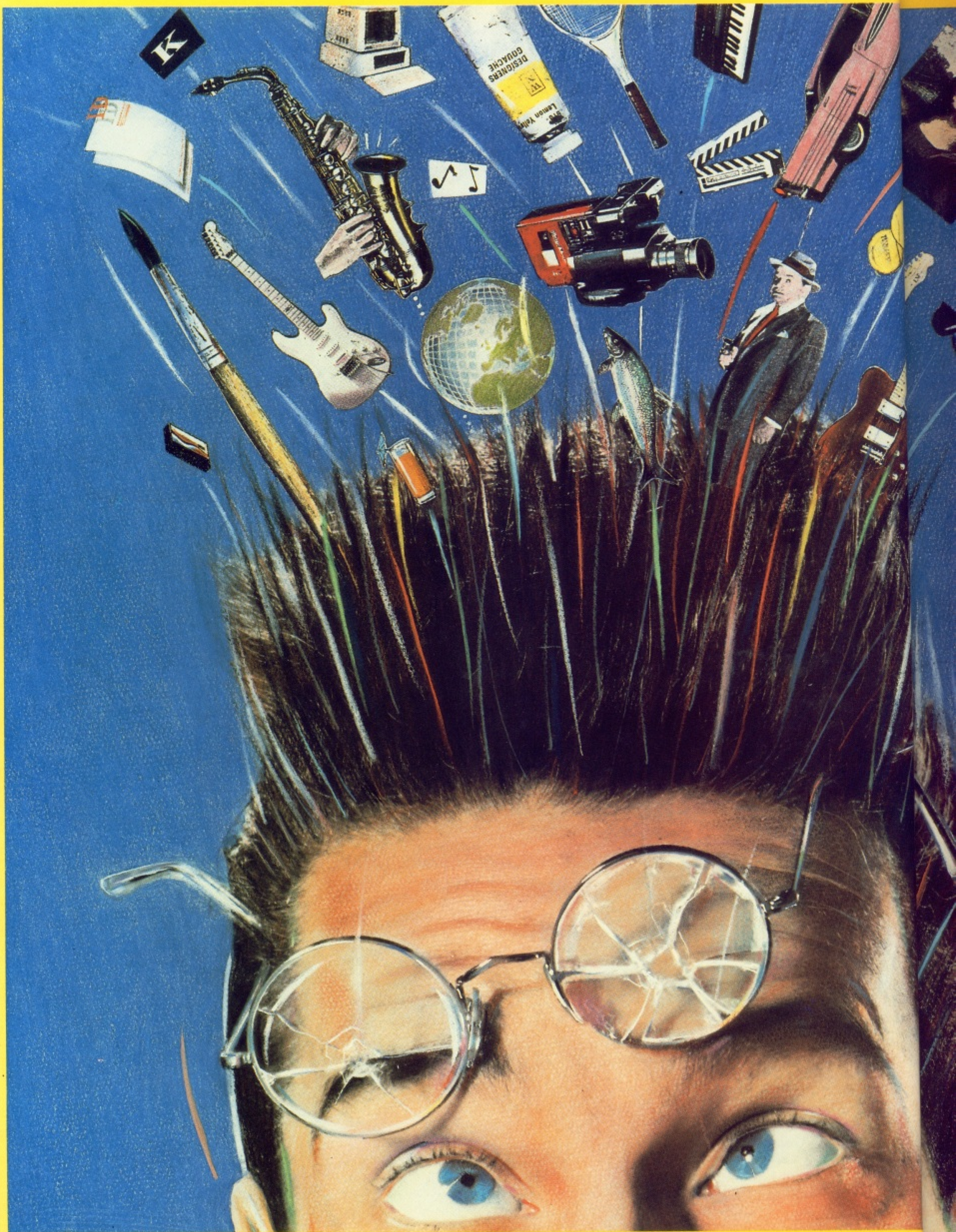
INTUITION
The author, John Foust, is an Amiga celebrity. He knows the rules and has kept to them.

SPEED
The program shuffles its numbers with aplomb, not lighting fast but nothing 3D ever is.

VALUE
You have to be prepared to spend money and time if you buy ray- tracing software. This costs comparatively little and saves time.

OVERALL 68%

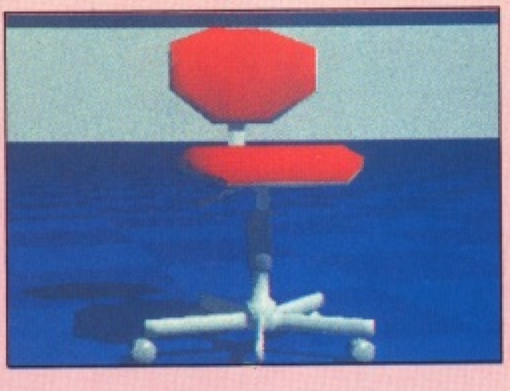
A very useful package for a small number of raẏ-tracing fans, reasonably priced.

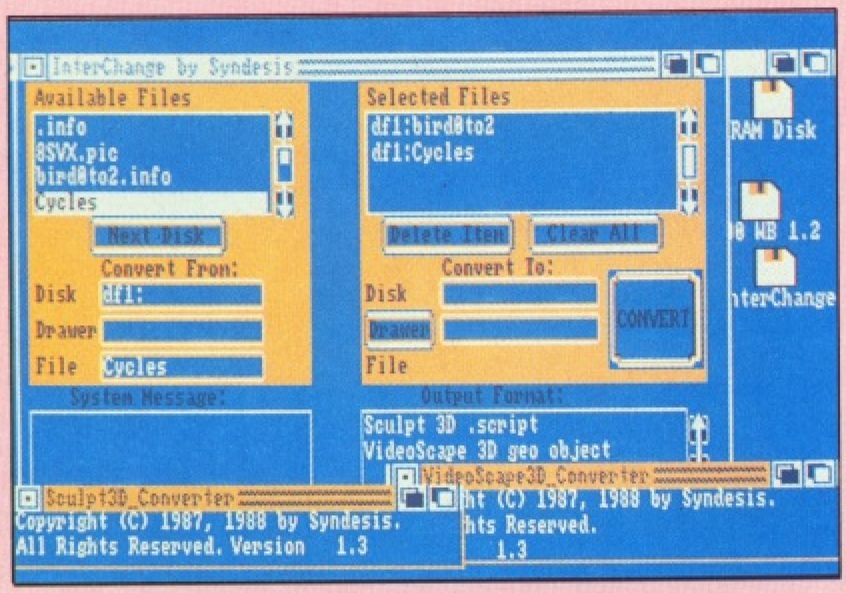


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The interchange display showing windows for the modules

REPORT CARD

Interchange Object Disc 1
Syndesis/HB Marketing 0895 444433
£19.95

USEFULNESS........
A good way to quickly build up a picture, useful for beginners who want to get going.

EASE OF USE.........
As easy as loading any other object into a rendering package.

INTUITION............
Not applicable, since the object disc is just data and does not run.

SPEED....................
The objects are designed with an eye to rendering speed, but the results depend on your package.

VALUE ....
Any more would be a rip-off. A lot of work has gone into the designs.

OVERALL 70%

A good buy when you are not used to the vectoring programs.

◄ includes things like a book, a pencil, disc and a chair.

The Sculpt-3d objects are rather varied. The head that is being editied on the back of the Sculpt manual is there, along with a complete body, a frog, a balloon, the sixth platonic solid (the Utah teapot) and more. The most useful objects on this disc are an alphabet. There are two versions in one, only the outlines of the letters are stored: in the other the letters are filled in plates. The outlines can be extruded with Sculpt-3d and the end filled to produce solid lettering.

In general this disc is good fun, and the alphabet is very useful. Although I will not use the objects much, they are a good source of test material and inspiration.

FANCY Fonts 3D solves the problem of lettering in the current modelling programs. There are no built-in features or support tools that allow the easy creation of interesting solid characters in the world being animated. (Videoscape 3D did provide a rather zippy font, but no tools to help glue it together).

My ideal tool would be a command which I give to a string so it generates an object representing that string. I hoped Fancy Fonts 3D was just such a program; unfortunately, it was not. It consists of Sculpt-3d objects for the letters of three fonts which still leaves the problem of gluing them together into a sensibly spaced string.

However, my expectations aside, the three fonts – Bold, Ital and Fanc – are very good. These are respectively a sans-serif bold font very similar to Helvetica bold, an italic font very similar to Bookman italic, and a medium weight font very similar to Clarendon medium. The shapes are well defined, not having an excess of polygons that would slow down the rendering, while having enough detail to be interesting.

The letters already have thickness, although if flat lettering is wanted it is fairly easy to strip them back down with Sculpt-3d.

If you do want some good looking fonts to put in your worlds, these will provide them, but be prepared to do some juggling and fiddling to get the spacing right.

REPORT CARD

Fancy Fonts 3D
Access Technologies/Amiga Centre Scotland 031 557 4242
£49.00

USEFULNESS........
Text is a primary requirement in producing business graphics, an ideal niche for the Amiga and Sculpt.

EASE OF USE.........
Would benefit from the automatic spacing of characters in strings, otherwise simple.

INTUITION............
There is no executable code on the disc so there is no need for interaction with the operating system.

SPEED....................
No internal surfaces makes the shapes extremely fast to render.

VALUE ....
While there is some clever design in the characters which reduce the surfaces, £50 is a lot for data discs.

OVERALL 59%

If you use a lot of text you can probably justify the cost in terms of design and rendering time. Too expensive for the hobbyist.

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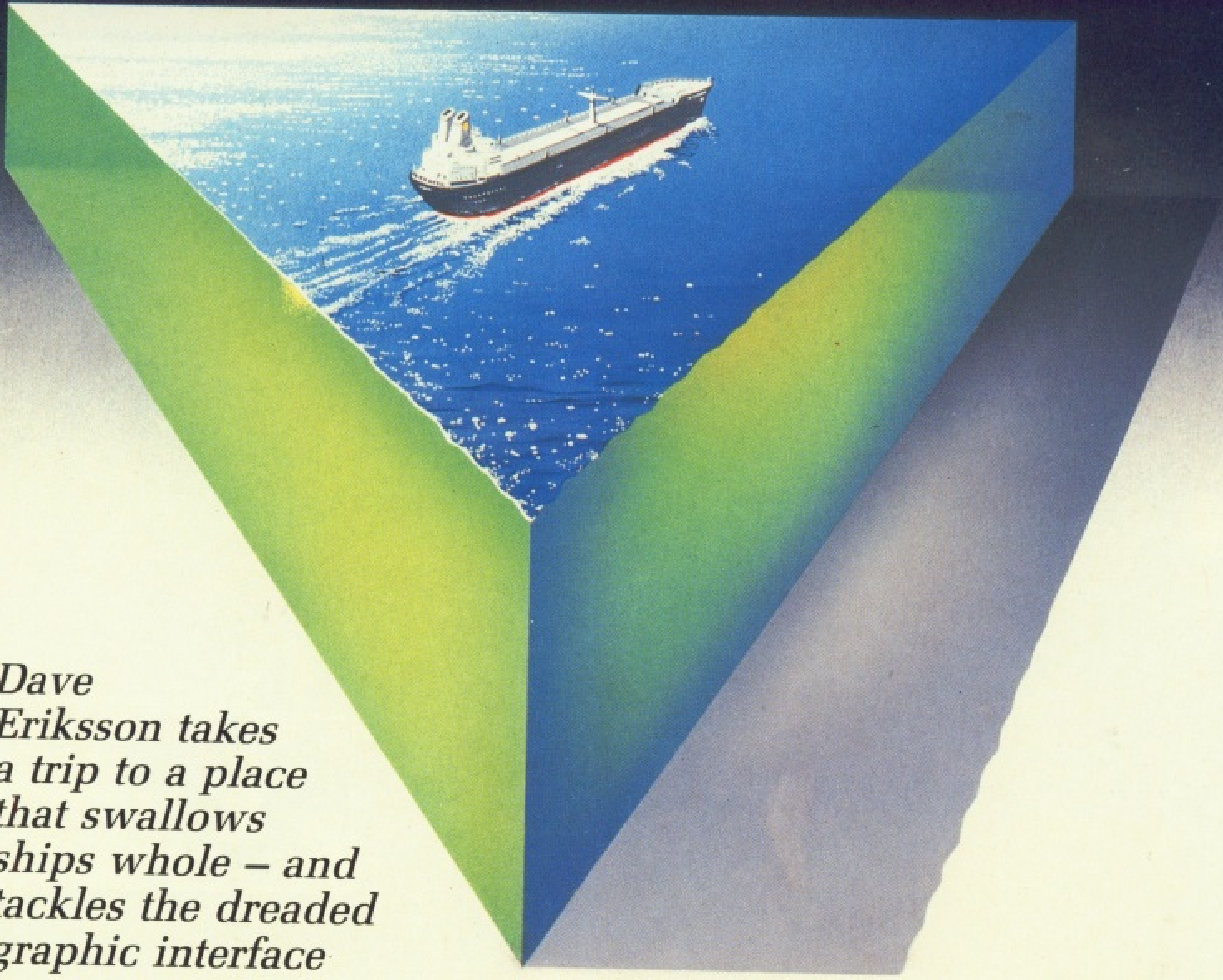
Square up to the Bermuda Triangle

MIRRORSOFT's latest Amiga adventure sets the scene among sun-drenched islands to the north of the Caribbean. The sort of place you might expect to find cricket, good fishing and friendly people.

It is also the location of one of the most mysterious puzzles of modern times – the Bermuda Triangle, an area of nearly three quarters of a million square miles between Florida, Bermuda and the Virgin Islands.

In the Bermuda Project you play the part of Bill Benson, a top reporter for the New York Star and Herald on three months special leave to investigate a spate of disappearances within the infamous Triangle.

It has never been far from the front page since a flight of American Naval planes vanished without trace in 1945. Many planes and ships have gone missing. Each time the complete absence of bodies or wreckage has fueled speculation of everything from ►



Dave Eriksson takes a trip to a place that swallows ships whole – and tackles the dreaded graphic interface

◄

instant mini-hurricanes to extra-terrestrial intervention.

Bill's intentions are to interview as many people as possible who might have first hand experiences of any strange happenings. He charters a plane and sets off to get the initial background information he needs. While flying across the Triangle his plane is hit by lightning and crash lands on an unknown island.

This is the start of the adventure. You have to guide Bill through a number of puzzles, explore the island and escape back to civilisation. The plot is stereotyped and the puzzles unoriginal but the implementation is novel and makes the game fun.

The display uses full screen scrolling to show where Bill is on the island. Everything is controlled with the mouse – no text is entered. If you see something of interest manoeuvre Bill up to the object and press the right hand button. Keep it pressed to display an action menu. Drag the mouse down to highlight an action and activate it by pressing the left hand button. This will either produce a text response or a further object menu.

Initially this is a little fiddly, as premature release of a button loses either the menu or the information you need to read. Give it 20 minutes or so to become accustomed to the technique.

MOVING Bill around with the mouse can prove frustrating and although it did not stop me from solving the puzzles, I found the drunken movements I imparted to him a little annoying.

The action menu has been simplified to just six commands – examine, get, drop, use, attach, detach and options. This may well irritate the purist who would demand that we "pour petrol from fuel can into fuel tank" rather than "use fuel can on fuel cap".

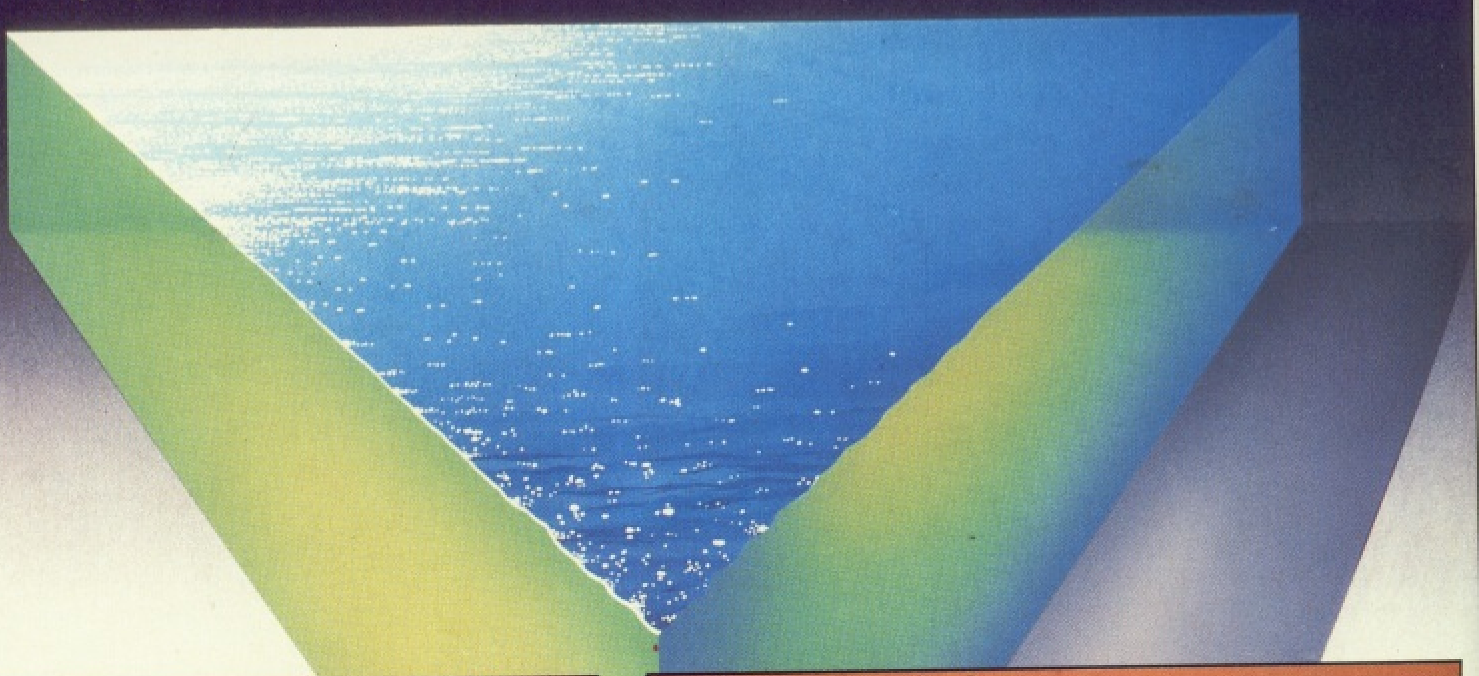
In practice the multifarious use of "use" becomes second nature and completely negates that horrendous search for the right word or sequence of words that can so often upset the flow of a game.

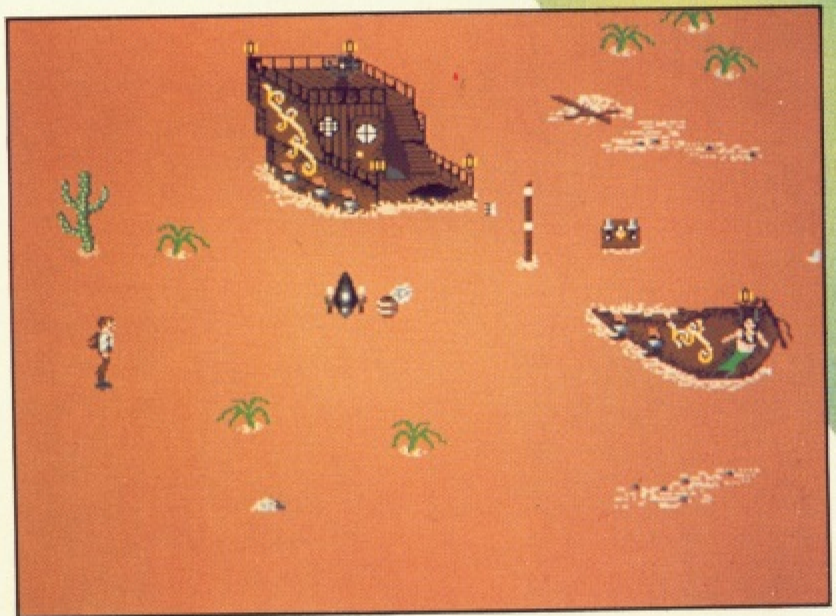
The options menu provides the expected save/load game position, restart game and status – which gives a percentage score and perhaps a clue on what is needed next.

The initial scene finds Bill standing next to the crashed plane. The pilot is dead and the plane on fire. It is imperative to put out the flames quickly. If left to burn out, the hatch will warp and you will not be able to get a vital piece of equipment from inside.

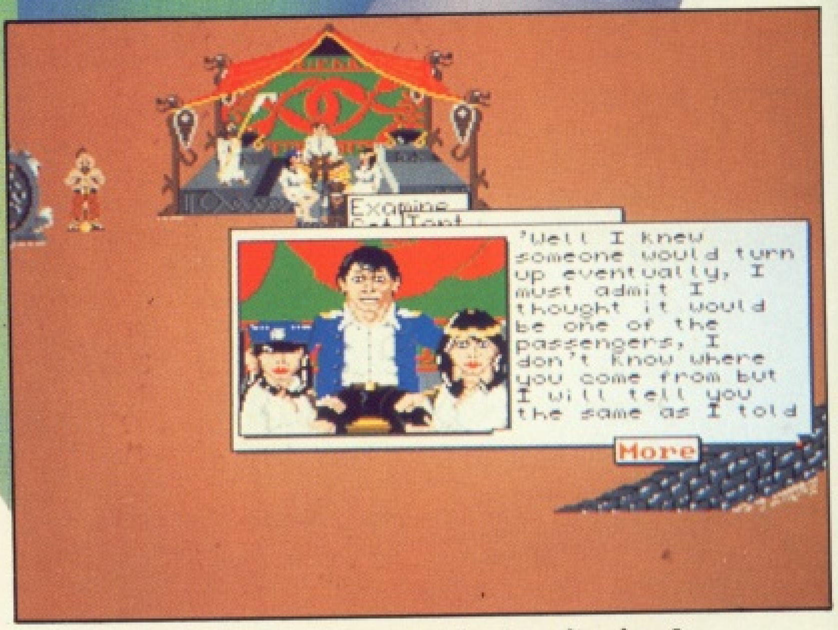
There are several times in the adventure where quickness of action becomes important. Failure to complete the right actions will result

►





Ye gods a pirate ship



How can I persuade the pilot to get back to the plane?


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in death. In classic adventure style, there are puzzles to be solved before you can get past the river to the east or the stockade fence to the north. Once across the river, you will find one of the recently missing planes.

Your task is now clear: you must find and rescue the six passengers with the pilot to escape. The island is large, with plenty to explore. Each passenger is held by different groups of natives and poses a separate puzzle for you to solve.

The atmosphere and tension are maintained throughout the adventure even though the story line becomes a little stretched by what you meet on your travels. Be prepared for everything from hi-tech cavemen, voodoo cults and cannibals to Inca pyramids, pirate ships and Red Indians.

There are quite a few objects to find most of which but not all, are useful. You can only carry a limited number in your backpack. Remember where you have left things, as some items are used more than once. Try not to run out of petrol while driving the jeep as you will need it to supply electricity later.

If Bermuda Project were text only it would probably be very run-of-the-mill. The graphics and simplified mouse command change it into an entertaining game that most will enjoy.

REPORT CARD

Bermuda Project
Mirrorsoft
£24.95

STORY LINE
Not exactly a real life adventure.

AURA
Holds together well despite the plot.

STAYING POWER
Should keep you guessing in places.

GAMEPLAY
Mouse control and simplistic approach combine well to save an average game.

VALUE
Will keep you busy and the pseudo arcade action may encourage a replay.

DIFFICULTY
A logical mind will make things easy.

OVERALL *72%*
Enjoyable entertainment. No real depth.

Graphics are the key to success for Rainbird's classic trolls, tunnels, sorcery and magic swords adventure, Legend of the Sword. Set in a dark age far away, the land of Anar is under attack from the evil wizard Suzar. With his mutated humanoids he has already overcome one of the land's strongest armies.

One of his most terrible weapons is his ability to transform the bodies of the fallen into more of these murderous humanoids. These immediately turn on their former comrades.

FROM a battle on the island of Anar, only one man managed to escape, cross the sea, and tell his harrowing tale to King Darius. After much deliberation it was agreed that sending another army would prove useless against the wizard's might. Another way to defeat this evil creature had to be found.

Legends from the distant past spoke of a wondrous sword and shield. Would they be able to protect the world from Suzar's evil? Is it possible that they may even be able to destroy the immortal Suzar himself?

Legend has it that these weapons were hidden on the island of Anar in the keeping of the mysterious Corsarians. A small band of warriors is chosen to journey to Anar to try and find the sword and shield. You are to be the leader; the other five have all carried out dangerous tasks for their king in the past and are hardened campaigners.

Approaching the coast your boat may land in only three possible places – to the north-east, east or south-east. You are now at the beginning of your quest, but before achieving anything really significant you must learn how to use what you see before you – not only in the realm of Anar but also on your Amiga's monitor.

Commands may be typed in at the input line, and there are several short cuts for the more commonly used commands. Above the input line is a section for text descriptions and responses. The top half of the screen contains a number of graphics windows.

To the left of the graphics section are two windows that display cameos of where you are and what actions you have just performed – or who you may meet.

The top right two thirds of the graphics section is the scroll window which displays either a map of where you have been or commands accessed by the mouse pointer from a command line at the top of the screen. To the left of the scroll window is an arrow that enables additional items to be displayed in the scroll window.

Beneath the scroll window are three directional icons – up/down, compass directions and in/out. If a direction is possible it will be highlighted; click on the appropriate box and you will move in that direction.

Lastly there is a picture of a candle which indicates your party's strength



My way home, if only I can find the pilot and passengers



We meet a leprechaun



The full screen map

and life force. Across the top of the screen are five command words – options, cancel, actions, map, execute. Move the mouse pointer to options and the scroll window will offer inventory, vocabulary, save, load, quit, recap, look, listen, wait, help and colours.

Actions provides examine, show, give, get, drop, throw, eat, drink, attack, smell, kick and taste. Click on any of these and a further menu of objects to which these actions could be performed is displayed for your choice.

Map displays the map mode within the scroll window and a further click within the window will display a full screen map, centered upon that shown in the scroll window. Finally, execute will initiate an action such as attack once you have indicated what you wish to attack and with what.

Legend of the Sword certainly has a lot going for it. Used carefully, the mouse-driven commands maintain a flow as you move around. The drawback is that only relatively few commands are accessible in this manner.

The program is complex and commands such as look up, look down or search are needed. As these are not available via the mouse it is easy to assume that look and examine from the action menu might be all that is required. Mouse commands are only a small part of what is understood.

There is a fair bit of character interaction within your party and with creatures you meet. You may have to exert a little physical persuasion to get members of your team to do what you ask.

The Help command rarely gives you a straight answer. You will still have to work out the answers to the puzzles, but it sometimes indicates where there is a puzzle you may have missed. Commands like go to, find and follow are recognised. Ram save and oops are almost a necessity as initially you are very vulnerable.

I would recommend drawing your own maps, the on-screen one is good but it is useful to know what is at a location, and this is not displayed. It could be embarrassing to walk into some angry trolls just because you had forgotten which room they were in.

Legend of the Sword will keep you guessing for a long time, it is not easy to solve but I am certain you will keep coming back to it for more.

TWO adventures that should prove to be absolute winners on the Amiga are now in the shops: Lancelot, written by Level Nine and distributed by Mandarin Software, and Ultima IV by Origin and distributed by Microprose.

They come from authors that have such a pedigree you will hardly need me to recommend them. Nevertheless by next month I hope to have had sufficient time at the keyboard to get deeply into one or both of them.

Lancelot is a text (with excellent graphics) adventure tracing the story of Lancelot's arrival at King Arthur's court at Camelot, the formation of the Knights of the Round Table and the quest for the Holy Grail.

It has all of Level Nine's commands that others have since copied such as oops, goto, run and many more. There appears to be plenty of character interaction and rather than developing their own fantasy "based on", it is rooted firmly on genuine folklore and legend.

Ultima IV is going to be a role player's delight. The system so successfully used in Ultima III has been expanded and refined, with more logical use of magic and a great deal of character interaction.

The fight against evil continues here with your team of characters attempting to become perfect in every way. Any deviation from perfection is noted and has to be atoned for. See a beggar – give him help; a helpless villain attacked – save him. This is the stuff true heroes are made of, and you will not reach the heights if you are lacking.

Plenty of new monsters to give battle to and deeper dungeons to explore. Gird the loins, sharpen the sword and prepare for a heroic quest that will literally take you out of this world.

REPORT CARD

Legend of the Sword
Rainbird
£24.95

STORY LINE
Good text supports and links puzzles.

AURA
Sweaty palms keeps you on your toes.

STAYING POWER
Plenty of devious puzzles to solve.

GAMEPLAY
Well thought out operating system.

VALUE
Plenty to think about.

DIFFICULTY
Not easy but the clues are there.

OVERALL *84%*
Hopefully the first of a new breed.

History's lesso[n]

The Amiga has evolved. When you take [it out of its box for the first time this] Christmas it has a soul inside. Simon Rockma[n] traces the tribulations which put it the[re]

The Amiga has evolved. When you take
machine out of its box for the first time thi
Christmas it has a soul inside. Simon Rockma
traces the tribulations which put it ther

TRULY innovative computers only seem to come from teams dedicated to their work. The owners of special computers – Macintoshes, Archimedes and Amigas – grow to love their machines, while people using computers as tools, IBM and Amstrad word processor users, rarely have an affinity for their machine.

In the early days of the Amiga A1000 there was a clubby feel. There were very few owners – after all a machine which cost more than £1,000 and had no software was a difficult purchase to justify, and many of the early owners kept in touch, spreading news and gossip.

The Amiga is now three years old and growing rapidly in popularity. With this success the grapevine is withering and now few owners know how the engineers who designed the Amiga suffered to bring us the best computer in the world. The story used to be told by R.J. Mical to packed audiences, but now he has decided that things must move on and no longer relates the tale.

The Amiga was conceived in 1982 as a successor to the Atari 2600 VCS. The VCS was an incredibly popular machine which sold by the millions. Activision was founded on the strength of games for the VCS, and Atari made a fortune.

It later blew the loot with some major mistakes such as paying so much for the game rights to the film ET that it ran out of budget to develop the software, rushed the coding and produced a dreadful program. But because it had spent so much, Atari needed to sell a lot of copies, and the cheapest way to do this was to make a lot at once.

The game, in US parlance, bombed. Atari was left with egg on its corporate face and loads of unsold cartridges which ended up as landfill in a desert.

But enough about Atari – for the moment – the company we are interested in is Hi-Toro. That was the name of the company founded to build a new machine. The project was initiated by three dentists who between them had $7 million to invest.

With hindsight they were foolish, the entire Amiga project probably consumed more than ten times that, so you are doing pretty well to be able to buy such a highly developed machine for under £400. But with the games machine market taking money like there was no tomorrow it seemed a wise investment, and $7 million a vast amount of capital.

The company changed its name to Amiga – Spanish for girlfriend – so it had the right image. Besides a name which alphabetically came before Apple was commercially stronger than Hi-Toro. The best games machine the world had ever seen was to be called the Lorraine.

The men who were to make it happen were Jay Miner and Dave Morse. Jay had designed the chips in the Atari 800 and the VCS as well as a number of non-computer products like a heart pacemaker.

Amiga could not have chosen a better man. It is thanks to Jay that we have HAM mode – which he put in as an experiment intending to remove it. Dave joined from Tonka toys as vice president of sales. A great leader of men it was Dave who held the company together through the roughest times.

LORRAINE was to be the games machines to end all games machines, more colours, faster sprites and the most awesome sound ever. But it was to be a long project. Amiga was based in Silicon Valley where industrial espionage is as common as discarded McDonalds wrappers in Oxford Street.

Amiga built joysticks as a cover. All sizes of sticks, from an iddy biddy little joystick which fitted in the palm of your hand to a thing called the Joyboard which you stood on to play the game. Joyboard and the attractive championship skier who helped demonstrate it provided the Amiga team with hours of amusement as she displayed the best techniques for playing the surfing and skiing games.

R.J. Mical joined Amiga to work on the software development. He had formerly worked at Williams, the arcade manufacturer who produced Defender, Joust, Robotron and the best pin table ever, Black Knight.

At Williams RJ had worked on SiniStar and Star Bike, an amazing laser disc game where the players raced other computer generated bikes around tracks which grew harder and harder. A neat touch was a SiniStar face which floated above the track. Unfortunately the colours used in Star Bike were not the same as those used in SiniStar so the face looked wrong.

The development team solved this major problem by redesigning all the other sprites in the game to use the colours the face needed. Star Bike was launched as the arcade boom died. A lot of arcade manufacturers lost their shirts and went back to pin tables.

So while Williams lost RJ, and later Bart Whitebrook, as great games programmers, Amiga gained a programmer for Intuition.

AmigaDos was originally commissioned from an American company which produced operating systems, but when they looked at the shaky finances of the company they were supplying they took another job instead.

Metacomco Software in Bristol came to the rescue. It specialises in Tripos installations and applications. Tripos is a multitasking operating system originally designed for mini computers at Cambridge University, but the Amiga was powerful enough to handle it. Much of the work was done by Dr Tim King, who has now moved to Perihelion to work on the Helios operating system for transputer-based machines.

RJ moved from his home in Chicago to the land of sun, sea and earthquakes. While everyone else hid under tables when a tremor hit the area RJ stood in awe, watching the car park ripple. He also took on the distinctive name. His real name is



Robert, but there was already a Robert and a Bob on the project so he became RJ. It was when he got to Amiga, decided he liked them and they liked him, he was told what they were *really* working on.

The machine the management thought was a games console offered some unusual expansion possibilities for something which was only supposed to have joysticks and games plugged in. There was a disc drive port, printer, serial and keyboard connections. Little extras which would save the Amiga's bacon.

BECAUSE Amigas didn't exist, the software was developed using simulators on 68000 based Sage computers. The progress was frantic, as they had a deadline of January 4, 1984. This was the Consumer Electronics Show (CES) where they wanted to demonstrate the machine in private to software houses in the hope of building up a base of games for the machine when it was launched.

They had a stand with joysticks on the outside and a closed off meeting room for invited guests only where they demonstrated the killer games machine. Unfortunately an escalator ran past the stand and visitors could look in as they travelled up and see something special was going on.

As an aside it is interesting to note that Konix, the joystick company from Wales, had a similar arrangement at the 1988 PC show. Joysticks on the outside and a killer games console shown to a selected few inside. But it is secret, so I won't tell you that.

The software was finished 10 days before CES and running fine on the Sage. But when they tried it on the prototype hardware, things fell apart. The prototype took the form of many large printed circuit boards, packed with chips. These were later reduced to the custom chips Paula, Agnus and Denise, but for CES each was so large and fragile that it took up a seat to itself on the plane.

There was a panic to get everything working for the show, a panic which meant that many people stayed in the office 24 hours a day, even over Christmas. RJ and Dale Luck played loud music and danced to keep awake, grabbing odd minutes of sleep while programs compiled, working with pillows on their laps so they could doze.

The machine was a hit at CES, despite attempts to keep it under wraps. The Amiga staff worked on the stand all day and wrote programs at night, including the famous Boing demo. Unfortunately the games market was in mid nose-dive and no one was willing to finance the hard up project. The impact the machine had made was enough to raise a little cash and cheat bankruptcy.

Real chips were produced and the gestating Amiga was taken to the June CES in Chicago. The interest was enough to raise more money, although not enough to finance the development which was needed. At one stage Dave Morse took out a second mortgage on his house to finance the payroll.

Eventually Amiga had to look at ►

selling up. Meetings were held with Sony, Apple, Philips, Hewlett Packard, Sears Roebuck – the large US chain store – Silicon Graphics, who make expensive workstations, and Atari. Jack Tramiel had been squeezed out of Commodore, the company he had founded, and bought Atari to strike back at Commodore.

He knew the dire straits Amiga was in and twisted the situation to his greatest advantage. He lent Amiga half a million dollars to tide the company over for a month while they negotiated a share price for the takeover. The money was spent by the end of the next day.

Dave Morse was in a weak position when it came to haggling with Tramiel over the share price. Amiga asked for $2 a share. Atari offered 98 cents. Amiga conceded to $1.50, Atari offered 80 cents. The price fell and fell. Whenever Dave Morse tried to get close to Jack Tramiel's figure the offer was lowered.

The men who had put every ounce of their waking energy into the project faced redundancy and failure. Three days before the deadline came up Commodore called Dave Morse. A meeting was arranged within 24 hours and papers were drawn up. Dave had minutes in which to finish negotiations and catch his plane back to Amiga. Commodore offered $4. Dave turned them down, saying it was not enough. They offered $4.25 and he signed.

Along with security, Commodore gave Amiga $27m for development, enough to buy Sun workstations for everyone who needed one. A few changes were made to the design shown at CES. The Lorraine had a 300 baud modem built in as standard and a device called the Chimney which would have allowed for second processors.

Commodore gave the machine higher capacity disc drives and made the base machine 256k instead of 64k.

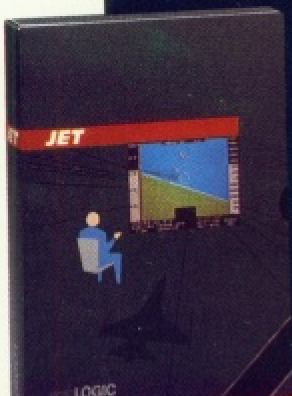
The A1000 was launched in New York in June 1985. Debbie Harry demonstrated the sound, Andy Warhol the graphics.

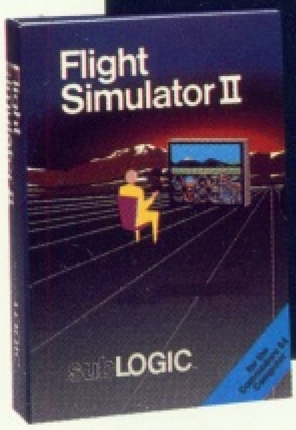
Jay retired and is happy to have seen Interceptor developed for his computer. While he was working on the Amiga he hoped someone would produce a top notch flight simulator, and for a while Bruce Artwick from SubLogic worked in-house at Amiga on Radar Raiders, a game which failed to appear but formed the basis for Jet.

Dave Morse and RJ went to Epyx where they are working on a new secret hardware project.

The Amiga reached the public who took to it with a fanatical zeal. It has not sold as well as the IBM or Mac, but it is loved and that is what has produced some amazing software: The stunning Sculpt 3D and ray traced demos by Eric Grahame, wonderful animations by Allen Hastings and Leo Schwarb and around 150 megabytes of public domain software collected and catalogued by Fred Fish.

Amiga users are nice people, they help each other and enjoy their machines. You can be part of this by joining a club like the Amiga Users Group or ICPUG and learn that there is more to owning the best games machine ever than just playing games.





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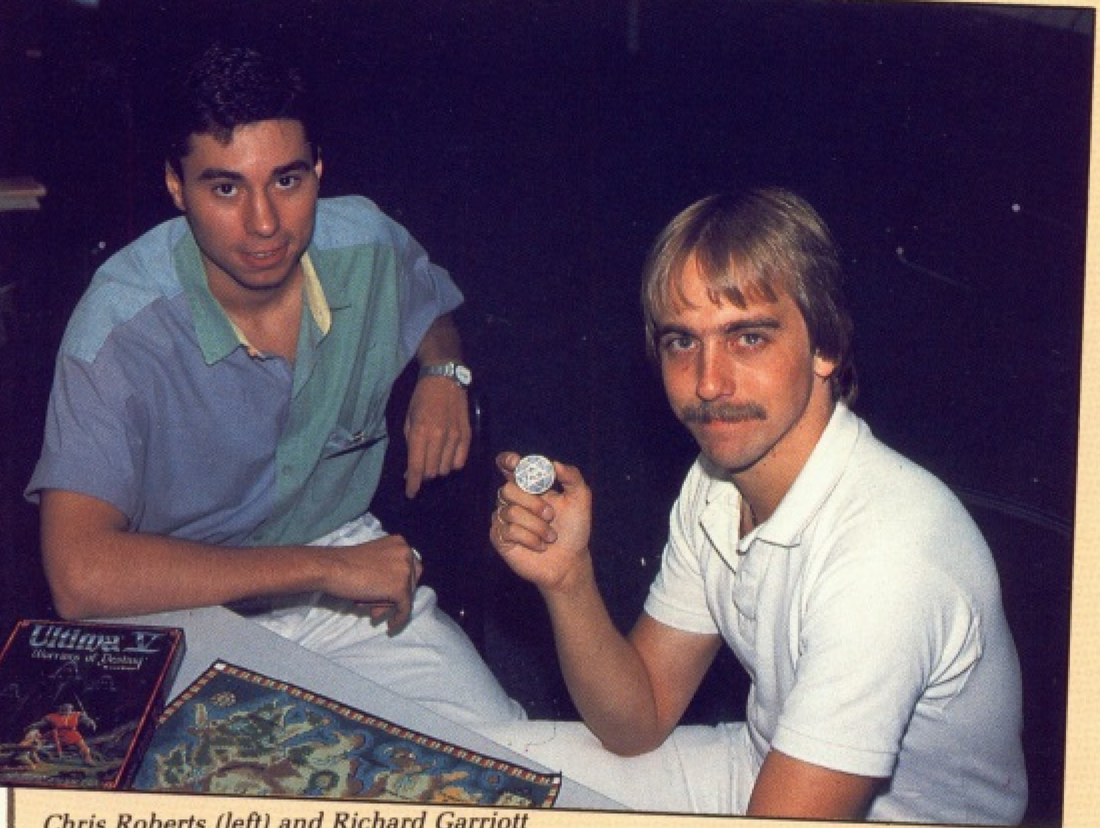
British in the New World

John Minson flew to America to interview the men behind Ultima, who create the Rôles Royce of computer games

RICHARD Garriott and Chris Roberts had been on the road for many moons before they arrived at the castle of their allies, Microprose, in Hunt Valley, Maryland, USA. There had been other visits, interviews, business – and in addition they were adding the final touches to two games, Ultima V and Times of Lore. No wonder Garriott and Roberts were exhausted.

But perilous travel is par for a pair of adventurers, so throwing off their dusty capes they tucked into a breakfast of Eggs Benedict before talking to the band of scribes who had crossed oceans to join them. And when the repast was past – and yea, yummily, it was good – all gathered to hear the famous histories of Origin Systems.

And lo, it came to pass, in that era known as the early eighties BC – Before Computing... or at least in the days when 16k still looked impressive – there came to these shores, in a tome of fantasy rôle playing called The Space Gamer, news of Lord British and his tribe, also called Origin Systems, the people responsible for the mighty saga of Ultima.

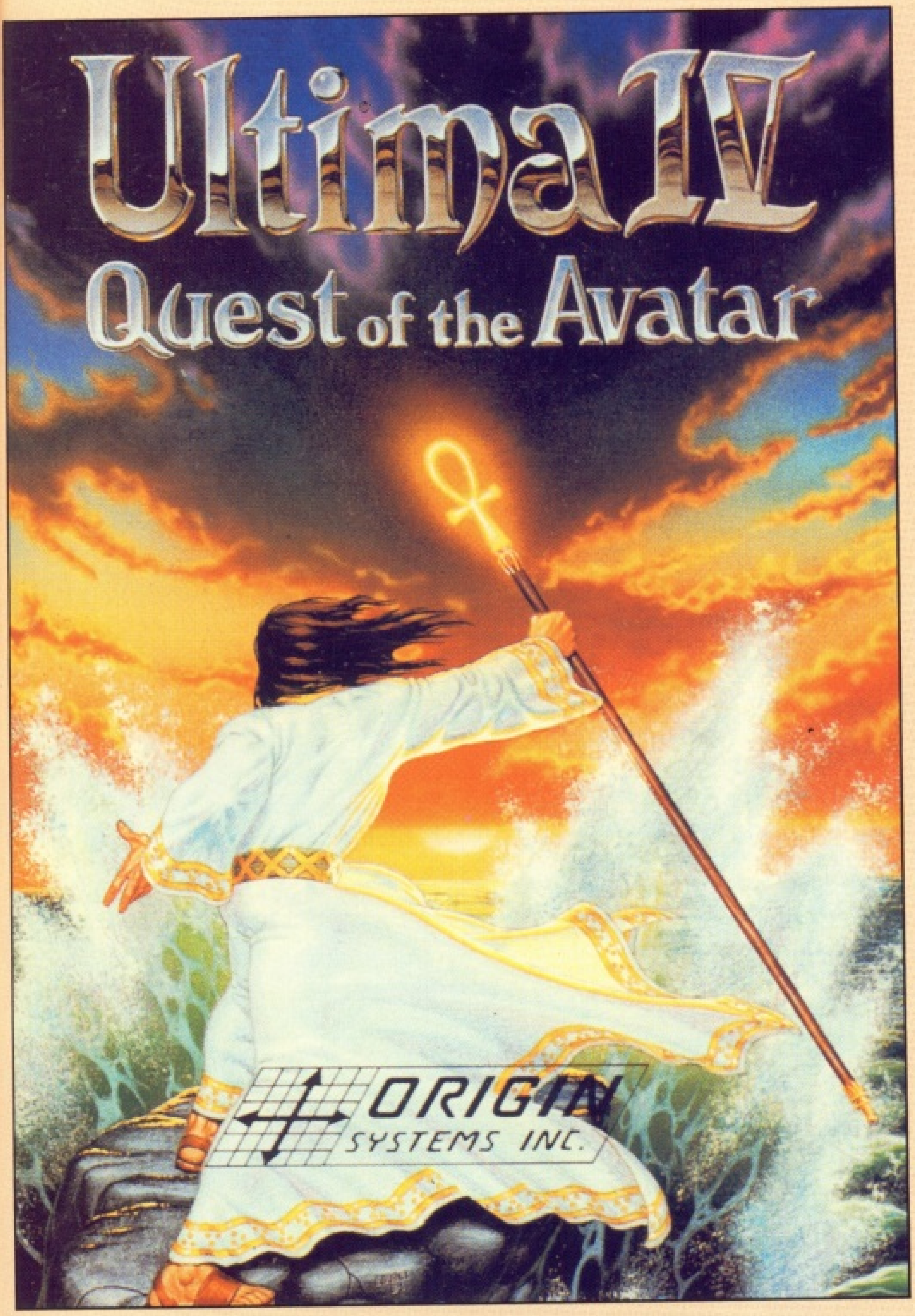


Chris Roberts (left) and Richard Garriott

It was then that the emissary who had called himself Garriott announced that he was in truth Lord British, travelling incognito (and in a plane) to confound his enemies. So settling back, as a bard strummed a Midi lute, he told of how he had been born in Britain but had been spirited away to the American continent as a child, where he had partaken of such pursuits as rôle playing games.

"I grew up on Dungeons and Dragons", he recalls, as well as Tunnels and Trolls, a system noted for its simplicity and solo scenarios. "I think a lot of new games are reaching a complexity level that loses the original attractiveness. Fantasy is supposed to be a psychological game with the environment – not just rules.

"Advanced Dungeons and Dragons is a step back from D&D. For me the thing about rôle playing was the intellectualising. AD&D is a humongous addition of rules to deal with all situations. When I see kids playing now they're not thinking of things to do but arguing about the rules. It's become a game for the mass market and there aren't enough creative people to run games out



there – which is why computers take it on".

Garriott had seen the link between the tables and dice rolling of rôle playing and the micro's number crunching way back in 1979, two years before Sir Clive first gave the British the 1k of the ZX81. Like so many games pioneers, Garriott wrote his first adventure for his own and friends' amusement, using a computer in the store where he worked, teaching himself Basic as he went along.

QUITE by chance, a publisher got to see this early effort and approached Garriott, but the experience of writing this first game convinced him that he could do better next time, so set to work on Ultima I, again using Basic, though incorporating a couple of machine code routines written for him by a friend.

The game set the pattern for all the Ultimas that followed, introducing players to the land of Britannia, which for the first of many times was beset by demonic hordes. The game combined large scale maps of the wilderness, resembling those of a war game, for travel and chance encounters, with dungeon adventures seen in 3D perspective.

While the program now looks primitive compared with its successors, nobody had seen anything like it at the time. Garriott was fortunate that Austin, Texas, was also the home of Steve Jackson (no relation to the British Steve Jackson of Fighting Fantasy fame), a board games author with Metagaming and later his own company.

AS well as designing a rôle playing system, the underrated Fantasy Trip, Jackson edited The Space Gamer, which included news of computer fantasy games, including Ultima. As Garriott recalls: "Steve has always been very supportive of Origin."

By the time Ultima I hit the shelves, Garriott was already considering a sequel, and felt that it should be 100 percent machine code, so once again he taught himself as he wrote. It took a long time and still looked pretty chunky, so even though he'd not intended the series, Garriott started work on Ultima III almost immediately he'd finished II.

Each successive Ultima has come, not from a desire to milk the marketplace, though each sold better than its predecessors as the series' fame spread and their quality increased but because Garriott wanted to improve on his previous efforts, fixing any shortcomings and refining the gameplay.

The games appear at intervals of two to three years. Garriott throws out almost all the code,

▶

starting from scratch, unlike some computer rôle playing games which just add new scenarios but do nothing to develop their basic systems.

For example, Garriott constructs the room and wilderness scenery with basic tiles. The number available has been doubled in each game, so Ultima V featured 512 possibilities, and VI, which is his next project, will feature 1,024, greatly adding to the variety of the landscape. He has also refined the sound capabilities, with long, atmospheric passages of mood music, Midi links for the ST and digitised sound effects.

NOW that Garriott has perfected his game system he is worrying about loftier matters, such as adding depth to plots. "The first three were 'go out and beat up the bad guy' scenarios, and that is still the standard plot. The reason you have to kill them is that you've been told to in the instructions."

"Well, I'd got my machine code and matured a lot, so in Ultima IV I abandoned that scenario and developed a literary storyline". That storyline concerns virtue, and instead of "slay the dragon, get the gold" you have to develop your primary virtues to 100 per cent in a variety of missions, with the computer secretly marking your behaviour.

Ultima V takes the story further, investigating what happens when virtue is taken to extremes, as it was by the Spanish Inquisition. Lord British is kidnapped and the zealot Blackthorn takes his place, establishing a tyrannical rule against which you rebel. To give you a real reason for revenge, Blackthorn kills one of the long-standing members of your party. This time, it's personal!

Garriott is also keen to get away from the idea of characters as a series of numerical attributes, which is why Ultima IV opens with a questionnaire. You have to answer how you'd behave in certain impossible moral predicaments, such as being entrusted to guard a rich man's gold but encountering a starving beggar. Would you be honest and pass him by or would you show compassion and give him a coin?

As Garriott says, you're caught between a rock and a hard place, so think carefully, because your answer will create a secret moral profile for your character.

Another way that Garriott helps hide the machine behind the characters is using an artificial intelligence conversation system. Selecting Talk from the control menu allows you to type in a topic on which you want information. Should the character know about that, or just feel like chatting, the answer will contain certain keywords as clues to useful lines of enquiry. It allows the player to converse with the non-player characters almost as if the game was being controlled by a human.

EVEN the packaging helps draw you into the realm of Britannia. As well as discs, the boxes contain several books of lore as well as less likely items such as magic coins and colourful cloth maps. The colourful extras cut $5 or $6 from Origin's profits, but Garriott reckons that they are worth it. So, apparently, did one retailer who was returning programs minus the maps; investigations by Origin's tame



Ultima IV abandoned the beat up the bad guy scenario

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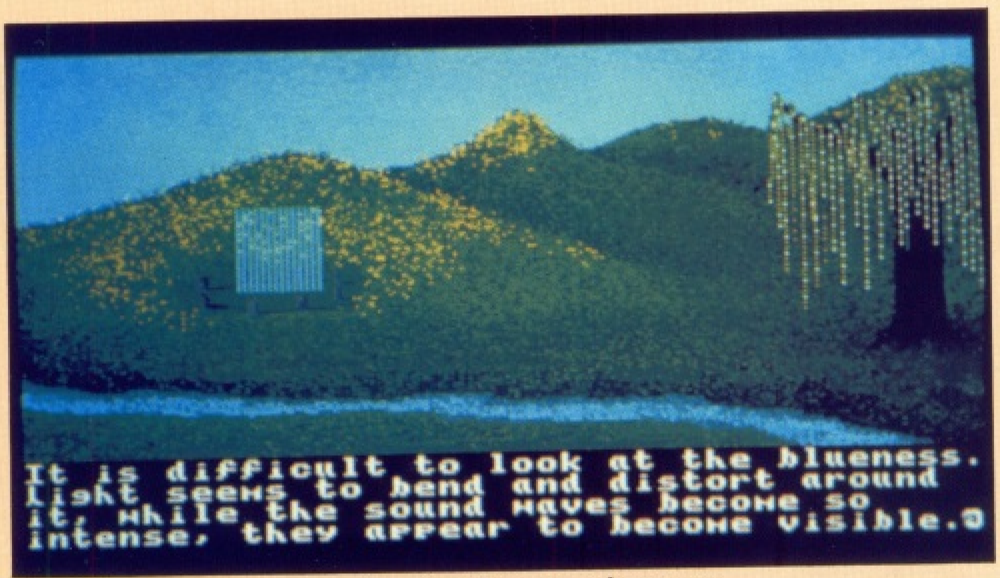
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The Ultima games are more than just dungeon adventures

◀

band of orcs discovered that they were being sewn together and sold as pillows!

As Garriott says, the Ultima games are more than just dungeon adventures. They contain complete worlds waiting to be explored by characters who develop over the campaign – just what hardened rôle players want. Start with the most recent, Garriott advises. It will be the most sophisticated, then work your way backwards if you want to investigate its predecessors.

But what of people who find such depth daunting – arcade gamers who want something more than a shoot-'em-up, but don't up to an Ultima? This is where Chris Roberts comes in. He has been sitting silently while Garriott explained his games. Roberts, a Mancunian, is a rather more recent export and his Manchester twang can still be heard behind his Texas tones. He worked for Imagine in Britain before Origin's desire to develop a populist rôle playing transported him across the Atlantic.

TIMES of Lore is the fruit of Roberts' labours, a game which at first resembles Gauntlet with its overhead view, but which adds the depths you expect from rôle playing, including problem solving and even conversation. The idea for this popular form of rôle playing game stems not from the American scene but from Japan. In the West rôle playing grew out of text adventures, but in the land of Nintendo the basis was arcade games and action. Times of Lore will combine the best of both approaches.

You can play a Knight, Barbarian or Valkyrie in the game, and though the world is smaller than in Ultima, it would still take a 20 minute marathon run round borders, to say nothing of entering towns or discovering dungeons. In fact Chris reckons there's more than 50 hours of gameplay in the program, and playtesters with full solutions still took three days to complete the quest.

To dispel the image of rôle playing games putting game detail before graphics, Times of Lore looks beautiful – there's a great wave effect on the sea shore. It also features superb music – the opening theme by Martin Galway lasts seven minutes. Conversation uses the Ultima keyword system, but to save typing, the topics for questions are entered from menus, which only feature useful options. The idea is to make the experience every bit as smooth playing as an arcade game, but with much more depth.

Chris has taken care to balance the difficulty, so that players won't get into too many fights early on, giving them a chance to learn about the place before meeting any really mean monsters, such as Orcs, Rocs, Skeletons and the like.

Meanwhile the dungeons contain teleports and hidden doors which players have to learn how to handle, and there are potions and spells to discover, including a very useful magical equivalent of the smart bomb.

Though you can play Times of Lore for the combat alone, it has a fairly complex plot to solve, involving two kings and their spies. Discovering who's really good, while solving a variety of puzzles, will test both brain and brawn. To complete them all you'll need to follow a series of clues, and a good place to start is by questioning people in the town.

When it comes to choice of character, Chris sways between the Barbarian, who hits hard but has no armour and is slow, and the Knight with less strength but more protection. However if you fancy speed, the Valkyrie gets around but doesn't do so much damage.

YOU don't actually increase attributes as in traditional rôle playing games – Chris found it detracted from the gameplay – but obtaining extra equipment, such as a dagger which boomerangs back to you, makes you more formidable.

"What we see Times of Lore doing", Richard explains, "is crossing the line between action and rôle playing and it should draw a lot of people in. Computers will never capture the social element of tabletop games unless you network, but I think it's a misconception that you need multi-players".

While nowadays everybody appears to be leaping on to the rôle playing bandwagon, Origin has a head start. After eight years of development its games have had time to mature, rather like fine wines. Anybody the least bit interested in rôle playing must try Ultima V, the ultimate Ultima. And even if you're a hardened arcade gamer, load up Times of Lore for the time of your life.

Ten out of ten?

Rex Last explores a spreadsheet which claims to offer first class service with no unnecessary frills



WHO was it who once said that 90 per cent of the effort goes into the last 10 per cent of any undertaking? And usually no one even notices that last 10 per cent.

It's rather like the hi-fi freaks who hang all kinds of expensive bells and whistles on to perfectly adequate audio equipment, and then need even more expensive electronic monitoring equipment to detect the enhancement of sound quality they've achieved, because the poor old human ear can't tell the difference.

That's what Digita International is banking on in its oddly named new spreadsheet: 9 out of 10. The idea is that it's putting on offer a slightly scaled-down product at an affordable price. All that's missing – so goes the claim – is that last 10 per cent that no one needs in most spreadsheet situations, anyway.

So I cranked 9 out of 10 up and gave it a whirl. It was almost a case of love at first byte, but with a couple of reservations. Out of the box comes a disc, a clearly printed 30 page manual and a reference card which props up nicely against the front of my Amiga 2000.

The spreadsheet screen itself is clear and unfussy, with a menu bar across the top which is dual-purpose in that the package can be command driven as well as menu-driven. For example, if you want to load or save a file, you can either click on the word "File" or type its initial letter.

Then you are in a submenu, again with a number of clearly-defined options. Digita deserves full marks for the way in which the menus and command-driven operations have been implemented. After a few moments fiddling around, even the most computer illiterate operator should make pretty good sense of what's going on.

For the spreadsheet novice, there's a tutorial introduction, which offers a sound, if unadventurous, hand-holding exercise. You're told about "cell references", in other words, how to put information into an individual box. Take the following examples:

A3
A1:G1

– means that you are accessing cell A3 by itself, and in the second

example, the cells A1, B1, C1, D1, E1, F1, and G1. Note that the two cells defining the range must be separated by a colon.

You're shown how to change the width of each column, and you're told to ensure that when you are entering text you must begin with a single or double quote mark, otherwise you're on the receiving end of the error message: "Bad cell contents".

Moving about the spreadsheet is achieved either by using the cursor keys or by moving the mouse and clicking on the location you're after (the latter is by far the easier and quicker option for the Amiga user).

One important plus of the Digicalc system is that the function keys can be preprogrammed by the user. Keys f1-f4 come with these off-the-peg commands:

f1 – Go to cell A1.
f2 – List files in current directory.
f3 – Print the current spreadsheet.
f4 – Zap spreadsheet.

Zap, as you might gather, means wipe out the present spreadsheet altogether. As this could be a pretty drastic action, you are prompted to confirm that you want to go through with it.

To change the function keys, select the Misc item from the menu bar. No prizes for guessing that this refers to miscellaneous, and the other diverse things you can do are change the direction in which the cursor moves after you've entered information into a cell – it defaults to one move to the right – and enter a password, about which you are given dire warnings as to what happens if you forget it.

So I had a go at reprogramming f9 to move the cursor to cell B4. At this point the honeymoon period began to wear a bit thin. I had to type:

e

– which achieved the desired result, but isn't the most user-friendly combination of characters I've seen in a command line. The instruction codes contained in f3 – print the current spreadsheet – frightened the living daylights out of me, and it took me quite a while to work out what ►

But what IS a spreadsheet?

THE computing world is full of jargon words and buzz phrases, and the trouble is that most people who write about computing assume that most people who read about computing know what those verbal mouthfuls all mean.

And of all the common terms bandied about in the computing mags, spreadsheet is the one that causes the most mystification. In case you are one of the mystified, here's a brief word of explanation.

In a nutshell, a spreadsheet is a computer program to perform calculations on rows and columns of figures. For example, you might have down the lefthand side of the page headings of expenditure for each month, like rates, electricity, food, transport, and so on, and across 12 columns the details of monthly expenditure for each item.

At the bottom of the columns are totals for each month and then a grand total for the year.

So what is so very special about that? Nothing – except that, once you've written that information down on a piece of paper you're stuck with it, and any changes will send the shares of Tippex soaring.

Alter the mortgage rate, and you'll have to rewrite a dozen or so figures and add up 12 columns of figures all over again.

What the spreadsheet does is to do all that calculating for you, once you've set the template up. The spreadsheet works as a series of cells referenced like this:

A:	B:	C:	D:
1			
2			
3			
4			

(and so on in both directions.)

Each cell, as it's called, is referenced by its column and row number: A1, B4, and so on. You can put numbers, text and formulae in the cells. So A1, A2 and the rest could contain text like "rates", "mortgage", "food", and so on, and against A: you could enter the title "Outgoings", and against B:, C: and so forth the names of the months of the year, like this:

A:Outgoings	B: Jan	C: Feb	D: Mar
1 Mortgage	500	500	500
2 Food	150	150	150
3 Wine bar	35	45	55

12 Totals SUM(B1:B11) SUM(C1:C11) SUM(D1:D11)

What would appear on the screen at B12 and so forth would be the actual calculated totals.

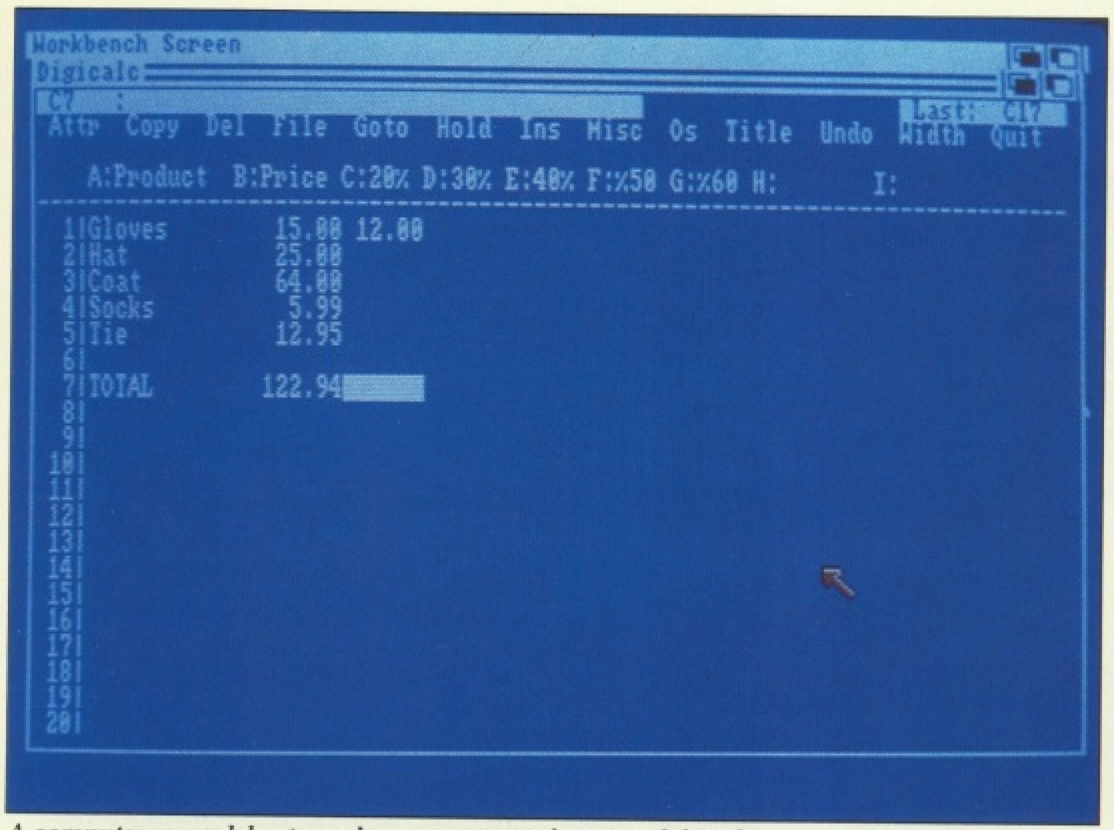
NOW let's assume that the mortgage payments are in cells B1, C1, D1, and so on across to the end of the year.

Instead of putting in an actual fixed amount, you can enter a formula, which can be copied right across the 12 columns.

Then a flick of the electronic wrist will enable you to alter the formula based on a new mortgage rate and all the cells will be changed and the totals added up again automatically.

You'll then be able to see at a glance what the effect is of upping the mortgage rate by one per cent, or in a different column what the knock-on effect is of adding a couple of pence to the price of a pint of best bitter in the local hostelry.

With a touch of imagination, you can readily realise just how enormously powerful this computing tool can be.



A computer spreadsheet can be an enormously powerful tool

◀ the sequence of six times e" actually meant.

For those of you bursting to know, it means answering Return to each of the prompts before printing takes place – in other words, print the spreadsheet using all the default values.

While I'm on a mildly negative tack, I must admit that I'm a little puzzled as to why Digicalc is so proud of its line editor. If you type the following, for example, ready for entry into a cell:

"Food

– remembering that text must be preceded by a quote mark, and you suddenly realise that you really mean to type "Fodder", for the family horse, you can move the cursor to the second o, overtype with d and then add the rest of the word. But if you want to insert characters into the line, it's a whole different ball game, to coin a cliché. Say you'd entered:

Food wine

The first thing you would realise is, of course, that you have forgotten the quote mark at the beginning. Unfortunately for you, the line editor remains in overtype mode all the time, so you have to go the beginning of the line with cursor lefts, type Ctrl+I (= insert character), enter the quote mark, move the cursor over the w, press Ctrl+I four times, then add and – and there you are:

"Food and wine

Nothing could be simpler. Or could it? I just gave in and retyped the whole line. If a public domain shell can offer a Rolls Royce command line editor to its customers, surely we can do better than a fiddly routine like this.

BUT back to the good news. The spreadsheet can cope with up to 512 rows of up to 52 columns each, and that's a lot of spreadsheet for the money. You can add or delete columns or rows wherever you like – but, as the manual very properly points out, there can be an unfortunate knock-on effect where you have a cell which contains a formula like:

SUM (B1:B6)

Then add a new row at B4, say, and the consequences could be interesting and, we hope, intended.

On the subject of SUM, this spreadsheet has the usual standard arithmetical functions, but there is no function which allows you to test for conditions in cells. For example, you may want to test to see if the total in a particular column exceeds a given sum.

Maybe it's a creditor who has gone over his standard credit limit, and if that's the case, you would want to flag the column with some kind of warning. That's part of the minus side of Digicalc's package.

Another absent feature which might cause you to think hard about whether to choose this product is the inability to create graphics from the spreadsheet, in the form of say, bar charts and pie charts.

BUT you can export spreadsheets from the system in Ascii form, which may enable other products to import it and process it. One of those products may well be a future Digicalc graphics package.

So what's my conclusion? I really liked the package to begin with, and first impressions are important. It's a no-nonsense spreadsheet with a few minor irritants, but despite them I'd certainly recommend it for general purpose spreadsheet work, and in particular in the educational field for teaching what spreadsheets are all about.

On a scale of 1 to 10? For me 8 out of 10 is about right.

REPORT CARD

Digicalc
Digita International 0395 45059
£39.95

USEFULNESS ....
A no-nonsense product lacking graphics frills – a stout workhorse.

EASE OF USE.........
Overall very good, but some details I found frustrating.

INTUITION............
A portable program, written in C which fits reasonably well into the Amiga environment.

SPEED....................
Goes like a rocket because the spreadsheet sits in memory.

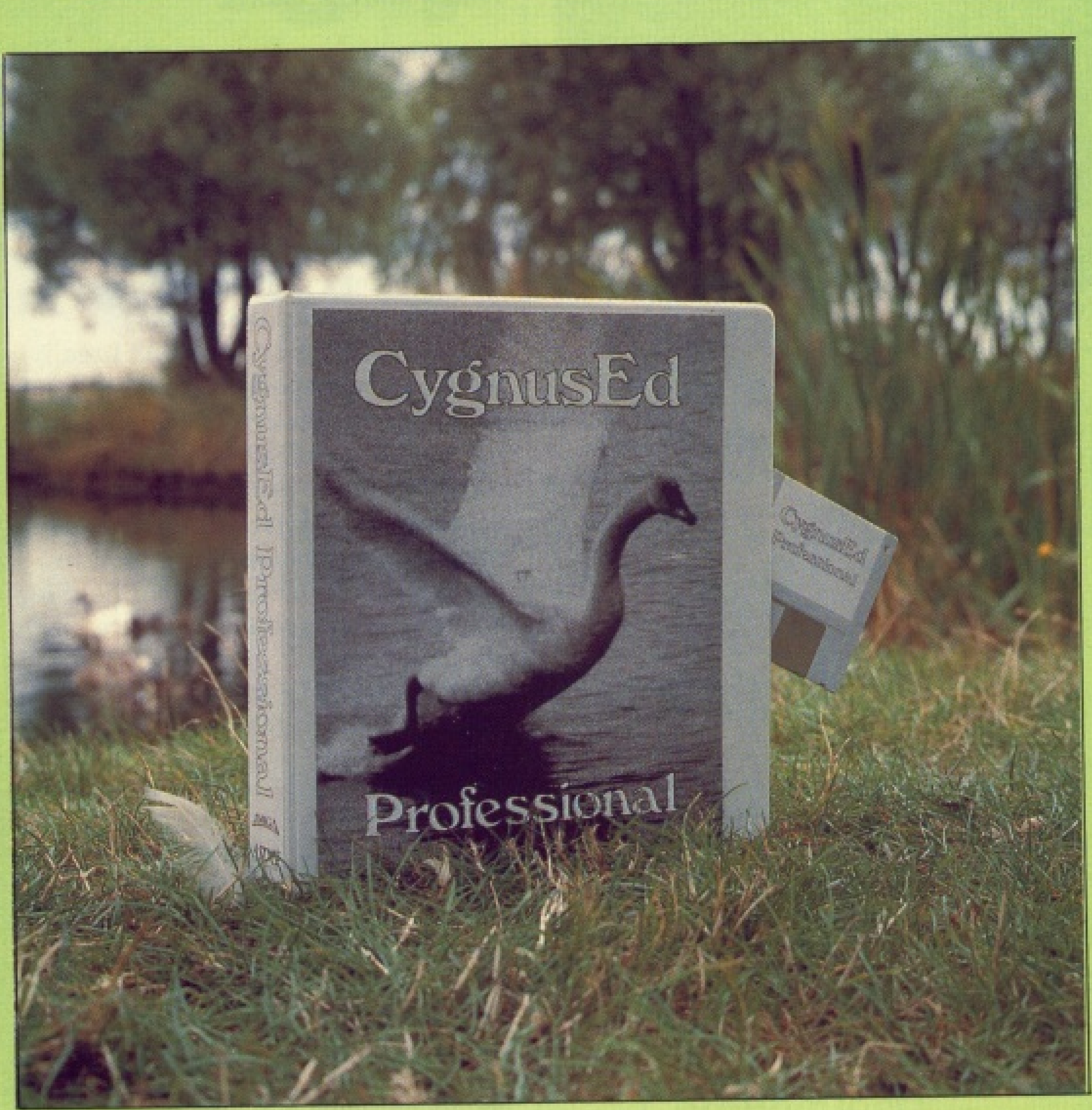
VALUE ....
Solid middle of the road performance at a budget price.

OVERALL *83%*

Ported to the Amiga following its success on the ST. Perhaps we have something to thank Atari for?

Super swan

Bill Tomlins looks at a text editor which could do wonders for your programming productivity



CYGNUSED Professional is a fully featured text editor by ASDG Incorporated, which is probably best known for VDisk – the Recoverable RamDrive program. ASDG specialise in hardware and "Programmer's Programs". It is obvious that they were developed by programmers, probably for their own use initially.

Unlike VDisk, CygnusEd is not in the public domain. In fact, far from it, the recommended price in the USA being only five cents short of $100. For this you would expect something a lot more sophisticated than the standard ED or MicroEmacs. It is.

CygnusEd is a specialist tool, intended for use by the serious programmers of the Amiga world and is not the sort of program that you would buy if you only write a 10-liner Basic program every now and then.

Having said that, text editors have come a long way in the last year or two, and the distinction between them and word processors is narrowing considerably. CygnusEd includes the ability to set right margins and insert printer control codes.

It is supplied on a single disc with a 100 page A4 ring binder manual. Having written a few manuals, I am very aware of the problems posed. The CygnusEd manual is fairly good as far as it goes. Explanations and descriptions of functions are clear and well organised into sections of similar commands, but the manual is not really complete as there is no index, nor are there any appendices giving a list of editing keystroke shortcuts.

This last omission is not too much of a disaster, as the shortcuts are all displayed in the pull down menus alongside their commands. However the lack of an index is more than just easy meat for a critical reviewer, it is a major shortcoming.

The manual is cumbersome to use, being large and with text on only one side of the paper. This is slightly strange in that the page numbering and headers are offset on alternate pages in the form used when printing on both sides. This means that on some pages you have to look on the left for the page number, on others, to the right. This, combined with the large physical dimensions, makes it less than a handy reference.

It would have been far better produced in a more compact A5 format and also with a few pictures of the menus in the appropriate places.

THE program is a different matter altogether, with lots of thoughtful features. The first time you use it it even loads with two documents present, one of which says it is only there to remind you that CygnusEd supports split screen editing.

There are so many editing features that I shan't attempt to describe them all, merely say that it has all the usual features, such as delete character, word, or line, to left or right, insert and overwrite mode, as well as ways to jump quickly around the text. Various un-delete options are also provided.

Screen dimensions are customisable, and Interlacing is supported with a suitable monitor, but this is somewhat memory hungry, of course.

Special attention has been paid to the speed of movement around text and it appears that a lot of work has been put into handling the blitter, as the speed and smoothness of scrolling is exceptional. A vertical scroll bar is provided and may be positioned on the left or right of the screen, or even removed.

Dragging the scroll bar results in

swift and smooth movement of the text as the bar is moved. As with most features of the program, the smoothness and hence the speed of scrolling may be configured to your requirements. The larger the scrolling amount, either 1, 2, 4 or 8 pixels, the faster the movement.

CygnusEd is pretty intelligent and if asked to move by larger amounts, decides whether to scroll the screen if the movement is within a small distance, or jump to the new area and redraw the screen.

The program is full of special features and I shall concentrate on these. Many of their default settings are alterable and may be saved as part of the environment.

You can load CygnusEd as a normal program either from the CLI, optionally passing the names of a number of files to load at the same time, or from Workbench, where you can shift click on a number of text file icons and finally shift double-click to load CygnusEd and the files.

A number of parameters can be passed to CygnusEd when it is loaded and these can be used to modify its operation to allow access to Dos commands from within the program.

Alternatively, CygnusEd may be loaded as a TSR – Transient and Stay Resident – program. When loaded this way it is possible to exit CygnusEd so that it still remains resident in memory, reduced to the minimum possible size, but can be recalled at any time from any window by pressing Right-Alt, Right-Shift and Return at the same time.

A SMALL program called ED lets you recall CygnusEd, passing filenames to load at the same time. With a multi-tasking computer like the Amiga, this might appear to be of limited use, but the advantage is that it provides instant access to CygnusEd at all times. You could keep a copy of the program in RAM:, which would load quickly, but this wastes memory because when you run CygnusEd it means that you actually have two copies of the program in memory, the one in RAM: and the loaded version.

CygnusEd can display up to 10 windows on screen at the same time, containing either different views of the same document, different documents, or a combination of both. You can move between windows by clicking on the one required. Windows are all full width and, by default, initially split the current window equally. This can be changed so that the current window is always expanded to maximum size when activated, or you can re-size it by simply dragging bars. Text may be copied or moved between these windows by highlighting the block to move, cutting or copying it, then moving to the destination window and inserting the cut or copied block.



The scroll bar is a quick way to get around

NOT only are the usual Block Copy, Move and Delete features available, but also a Columnar Block or box mode. When used, instead of the block being a contiguous piece of the text from beginning mark to end, the beginning block marker and the end of block marker form the diagonally opposite corners of a box. This may then be cut, copied or deleted as normal.

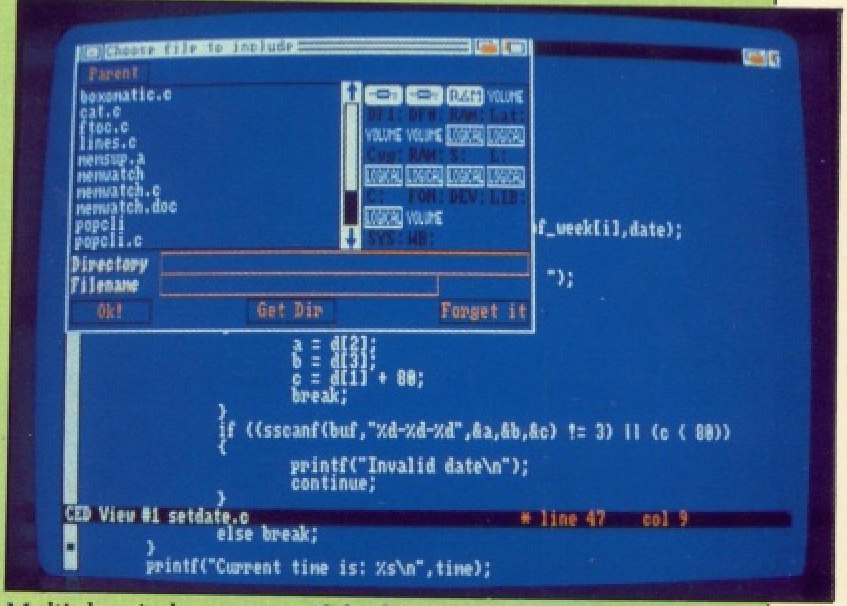
This is very useful for re-arranging columns of text or numbers and can also be used to create a multi-column document by formatting it to a narrow width and then moving the lower part up and alongside, just before printing.

Word wrap is taken care of by the provision of an option to set a right margin at whatever column width you require, and the facility is also provided to auto-indent a new line. This is done by pressing Shift-Return or Enter on its own. Tabs may be set at any required spacing, or at a constant number of spaces apart.

Printer escape code sequences may be inserted into the text and when Caps Lock is on the function keys may be used to insert pre-set codes for underline, bold, super and subscript, Proportional and so on. These are not displayed on screen, but may be indicated in inverse if requested.

Search and Replace options are well catered for, with options to ignore the case of words, search for complete words only, forwards or backwards. Wild cards may also be used and the asterisk indicates any single character.

Another, separate, Search command is the Find Matching Bracket option, a feature of great use to programmers in C. Positioning the cursor on a curved, curly or square bracket and pressing Amiga-h will make the cursor jump to its matching bracket, pause for a second, then return to the original position. I would have preferred it to remain at the matching location rather than return, as you would only need to repeat the command to return anyway.



Multiple windows are useful when you have several include files

Another feature is macros. A learn mode is provided and once selected, you press the key or key combination you want to assign the macro to and then carry on entering the keystrokes. Macros may contain text or CygnusEd ▶

keystrokes, or a combination, enabling you to create your own commands.

It is a simple thing to create a macro to produce a new command, say, start a new line indented to the previous level, insert an opening curly bracket, move to the next line and indent one stage further, something that a C programmer will find useful, for example.

One rather useful feature is that when you select the key to define, CygnusEd asks whether you wish to use further keys as part of the command. This provides a means of having Wordstar type keystrokes, such as Ctrl-K then B to mark the beginning of a block.

Nearly all keys may be redefined and the macro definitions may be saved and loaded again in the future. CygnusEd is provided with an example definition in the form of a MicroEmacs emulation file.

One option that I was not able to try out is the Interface with ARexx option. ARexx is an interpreted programming language for the Amiga and apparently has the ability to interface with other programs, sending commands to and receiving from them. It is not supplied with CygnusEd. The manual devotes about 25 pages to using ARexx.

The option does have one other use though, in that it allows you to execute AmigaDos commands from within CygnusEd. This will only work if the CLI is left open on entry to CygnusEd – an optional command switch on loading, if the RUN command is present in the C: directory and if the command is in the current or C: directory.

There is more to CygnusEd, in fact much more, with features like place markers and jump to line, that there just isn't room to mention, but you will have got an idea by now of its extensive nature.

CYGNUSED isn't perfect, but it tries very hard. The only bug I have come across is that when expanding and contracting windows if any blocks are marked and displayed the highlighting can get a bit spread around where it shouldn't. This eventually corrects itself when the screens are redrawn and is visual, rather than dangerous.

I would have preferred the gadget in requestors to have said "Cancel" instead of "No way!" or "Forget it!". But when you are reduced to this level of nit-picking you know there is not much wrong with the software.

One other good feature of CygnusEd, also a bit of a problem, is that virtually all the commands are allocated to Amiga keystrokes as well as being selectable from the pull-down menus. The consequence is that some of the keys do different things depending on whether Shift is pressed with the Amiga key or not, and this takes a lot of getting used to.

In a couple of places the manual incorrectly shows the command in the wrong case as well. There are eight different pull down menus and some of those are large and in turn open up further menus.

Macros are very flexible, but there is no way to construct a new command that cannot be reproduced with other keystrokes. At least one other editor on the Amiga and several on the PC allow you to use a programming language to construct your own commands, though this is very time-consuming and for 90 per cent of purposes, the CygnusEd method is quicker and simpler.

If you are a serious programmer and need an editor with a lot more power than the supplied ED, or MicroEmacs, then CygnusEd must be at the top of the list for consideration and is good value. But if you only have occasional need for such a thing then you may well consider the cost too high.

In either case, it doesn't alter the fact that CygnusEd is an excellent example of a modern text editor.

REPORT CARD

CygnusEd Professional
ASDG/Amiga Centre Scotland 031-557 4242
£69.99

USEFULNESS ■■■■■■■■■■■■■■□
CygnusEd does a lot and what it does, it does very well.

EASE OF USE ■■■■■■■■■■■■■□□□
Due to the sheer number of commands available, it takes time to learn, though basic operation is natural.

INTUITION ■■■■■■■■■■■■■■□□
Follows the guidelines and includes lots of shortcuts.

SPEED ■■■■■■■■■■■■■■■□
Speed of movement round text and searching is excellent.

VALUE ■■■■■■■■■■■■■□□□
Good value if you need a powerful text editor, expensive if you don't.

OVERALL *84%*
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So you want to be a C programmer?

Hugh Allan finds out what it takes to be a C programmer. A logical mind, skill and patience help, but you won't get started without a really understanding bank manager

EVEN in this age of "all power to the user's elbow", a few Amigans still feel they want to try their hand at C, the Amiga's native language. Most of the applications you use on your Amiga are written in C, and a good amount of the system software is too, so there must be something in it.

Why C? It is a programming language developed from B, as was BCPL, the language the infamous AmigaDos is written in. It was designed for systems software development, so it allows you to get down and be dirty with the machine, and still take advantage of the elements that make high level languages – Basic, Pascal and such like – bearable.

C is usually a compiled language. This means the compiler reads a text file line by line and turns it into machine code, rather that reading the program a line at a time then executing it. So C also has the advantage that you don't have to keep an interpreter on your program disc in order for your program to run, as it is fully selfcontained.

As a rule C runs much faster than Basic, and as the Amiga system software was written in C so you will be able to access and take full advantage of it directly.

With any new language its always a good idea to read a book about the language before you splash out on a package. The book that is always recommended is Kernigham and Ritchie's The C Programming Language, known as K&R. This was the original book describing the language, and although you may find the text heavy going, it's an essential if you are to master the language. Be warned it is pricey, a slim volume, it belies the cost of £25.

The book I would recommend would be the C Users Handbook, by Weber Systems Inc. It gives a good history of C, and always accompanies text with an example. The style plods a bit, text books rarely rival a good thriller and never have the obligatory bedroom scene. Perhaps this is why they have to charge so much for them. Whether you choose the traditional K&R route or go for a young upstart you will need to buy a C book eventually, as the manual with your compiler will make no attempt at tutorial.

So you've read the book, and you haven't been frightened off by the . – & ! like phrases. C is famous for its terseness and lack of readability, often referred to in jest as a write-only language. You will have to buy a compiler, which isn't a single program, but a suite of programs for software development. Also you may wish to buy extra packages to save time on telling the system how you want various parts of your program to look, and utilities to check and debug your code.

When you take the plunge, dust off the Visa card and think about all the profile points you will rack up. This is what should be on the shopping list:

● **Compiler**: The strict definition of a compiler is a program which takes a text file of C instructions (a source file) and compiles it into an intermediate file called an object file. The object file cannot be run, it is there to be combined with other object files to make your runnable program.

● **Librarian**: When you have a collection of object files, you may often see them in the form of a library file. A library file, is simply two or more object files put into one, so they can be searched for the object file you want for inclusion in your program.

You will get a librarian program with your compiler. This will list, include, update or extract object files from a library, and a set of ready-made libraries so you can access a standard C Set of functions – mostly ones to deal with strings – and a set of libraries that let you access the Amiga system software.

● **Linker:** This takes a collection of libraries and object files and turns them into an executable program. The linker will make sure only the object files needed by your program are included.

The standard linker is called ALink, written by MetaComco – or MetaComSlow as the wits have it. This used to be the only one available. It is slow, but it gets the job done. Then a company called The Software Distillery wrote a linker called Blink, which is the one most developers use. Lattice has bought the rights to Blink.

● **Assembler:** Some compilers come with a machine code assembler. Many programmers will want to rewrite parts of their program in assembler to speed them up.

● **Debugger:** It is doubtful that any C program you write will run first time. Programmers who write code which compiles first time fall into two categories – lucky and liars.

Most of the errors will be typing mistakes, but sometimes bugs will come up and you have no idea where they are, let alone know how to fix them. There are many different kinds of programs to help you in this task, the main types being:

☐ Lint: This is a program which will

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check through your source file looking for errors not covered by the source checker in your compiler. Its name stems from the way Lint collects all the "fluff" from a program.

□ Debugger: This will sit in the background while your program is running and lets you stop the program to examine memory and registers. This means you can watch programs while they run.

The 68000 microprocessor in the Amiga has debugging facilities built into it, making such programs possible. They tend to need a great knowledge of the Amiga and the 68000 to be of any use though.

□ Source level debugger: Only available for the Manx compiler, these programs work with your source code and let you debug it, acting like a normal debugger for C code. Wonderful things if you can get one.

□ Object mobile disassembler: These programs will turn an object file into an assembler source file. Since debugging a disassembled, compiled program is only a shade less taxing than eating a Big Mac with chopsticks, you are usually better off looking at the source code.

NOW you know what sort of programs you want, it is a matter of deciding where to spend your money. Choosing a compiler is always very difficult, but on the Amiga it's a case of less is more. In the red corner is Lattice, while in the blue corner Manx lurks under a trilby.

Some of the success of the Amiga is due to Lattice. It was ready at the beginning to convert its C compiler to the Amiga, and most of the early Amiga applications such as DPaint were developed with Lattice C.

Just as things start to look simple Lattice confuses matters by offering two flavours of C Compiler. Lattice C V3.10 is the no frills version of the compiler perfect for beginners. It isn't as fast as Manx or Lattice C V4.01, but if you get taken by C you can easily upgrade to V4.01.

When you buy the compiler you will get the compiler, an assembler, a librarian, blink, and an object mobile dissasembler. It costs around £120.

Lattice C V4.01 is the faster version of the compiler. If you intend to do any serious work you must get it. Programmers refer to it as Lattice V4.01 and not just C in the same way boy racers drive XR3i's, not Escorts. Its faster, and can handle overlays. The compiler comes with header file compactors which make programming easier and simpler, so your C program will compile and run faster. With an extras disc, various tips and useful programs thrown in V4.01 costs around £200.

Manx C is newer than Lattice, and was favoured by software developers more until the advent of V4.01. The new Lattice compiler's speed and flexibility have caused many people to switch back. Manx has the great advantage of offering a source level debugger.

MANX comes in two versions, Professional and Developers, although all the latter version has extra is some Unix utilities and extra math libraries. The source files of the supplied libraries are available at extra cost. The Professional version comes with compiler, assembler, linker/librarian with overlays and debugger. The source level debugger is an invaluable tool. This lot works out at £245 for the compiler and £50 for the source level debugger.

Along with your compiler you will need a set of technical manuals. The best to buy are the ones written by Commodore-Amiga and sold by Addison Wesley. C is a rich man's game, the manuals will set you back by as much as £100. For the information they give it is a fair price, but you may instead choose to go for the Sybex programmers' manuals – not so good but affordable.

Having lashed out more than £300 on software and documentation you will not be surprised to learn that there is plenty more to buy if you want to keep your account in the red.

It is a good idea to buy Power Windows 2, which will allow you to set up the windows and gadgets of your program without spending hours over a hot editor and pocket calculator. It costs around £65, and was reviewed in the August issue of *Amiga Computing*

Some software is free. There are some PD/ShareWare programs kicking about that you should get. Have a look at MemWatch, ConMan– a console handler and the ASDG-Recoverable Ram Disc (ASDG-RRD). The PD version of GOMF (1.0), the program which lets you survive an attack of the Guru, is also a must.

The Lattice C manual says you really need two disc drives to run a compiler. The manual is not lying. It is possible to run the compiler in 512k, but you can't compile large source files. An extra megabyte will allow you to put the C: directory from your compiler disc in the ram disc, and two extra megs will allow you to also put the source and the libraries and header files in ram also, making for really fast compilation.

So you see, starting on C can be rather expensive, but the rewards are enormous. Any application you see on your Amiga you could write if you had the patience and talent – in that order. Although C may look difficult at first, you will find its difficulties turning into powerful aids in time.

Do remember to stick in there, it could take up to six months before you get good enough to write largish programs. Besides, you need to sell some programs to pay off the loan you took out to learn C.

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All these books are available from Computer Manuals Ltd. 021 706 6000.

Microfiche Filer

David Foster take a close look at a database which thinks it's a photograph



MICROFICHE

The traditional microfiche is a photographic reduction of a large amount of data in "page" form on to a transparency. It is related to microfilm, a similar method using spools and microdots, the things spies hide behind stamps in poor espionage stories. The object is to pack a lot of information into a small amount of space and still allow easy viewing.

The microfiche may be viewed using a special projector and is used by moving a square grid over the transparency to highlight the page you require. At the same time an enlargement of the currently selected page is displayed on a large screen above.

Microfiche have been used for a long time by car manufacturers as a means of distributing spare parts lists and by companies such as W.H. Smith to catalogue all currently available books. They are a very compact way of storing large quantities of read-only information, but are likely to be superseded by optical discs.

JUST when I thought I had seen every possible attempt at making a database look different, along comes Microfiche Filer – MFF from now on.

MFF is a computerised version of the traditional microfiche system and the presentation attempts to follow the original in many ways. How well does this work in reality? On the whole, the idea works well, but with one or two reservations.

The program is supplied on a single disc with a spiral bound A5 sized manual of about 100 pages. The manual makes easy reading and is clearly laid out with lots of pictures of the screen displays at various stages. It includes full details of how to make backups of the program disc and how to install it on a hard disc.

That is immediately followed by a quick tour of the program, making use of some of the example databases supplied on the disc. Each part of the program has a chapter to itself and additionally, there are appendices covering concepts for new users, tips and shortcuts, quick reference and troubleshooting. Detailed contents pages and an index at the back go towards making the program as easy to learn as possible.

The supplied disc is not self-booting, MFF may be run from either the Workbench or the CLI, but you must have at least 512k and Amigados 1.2.

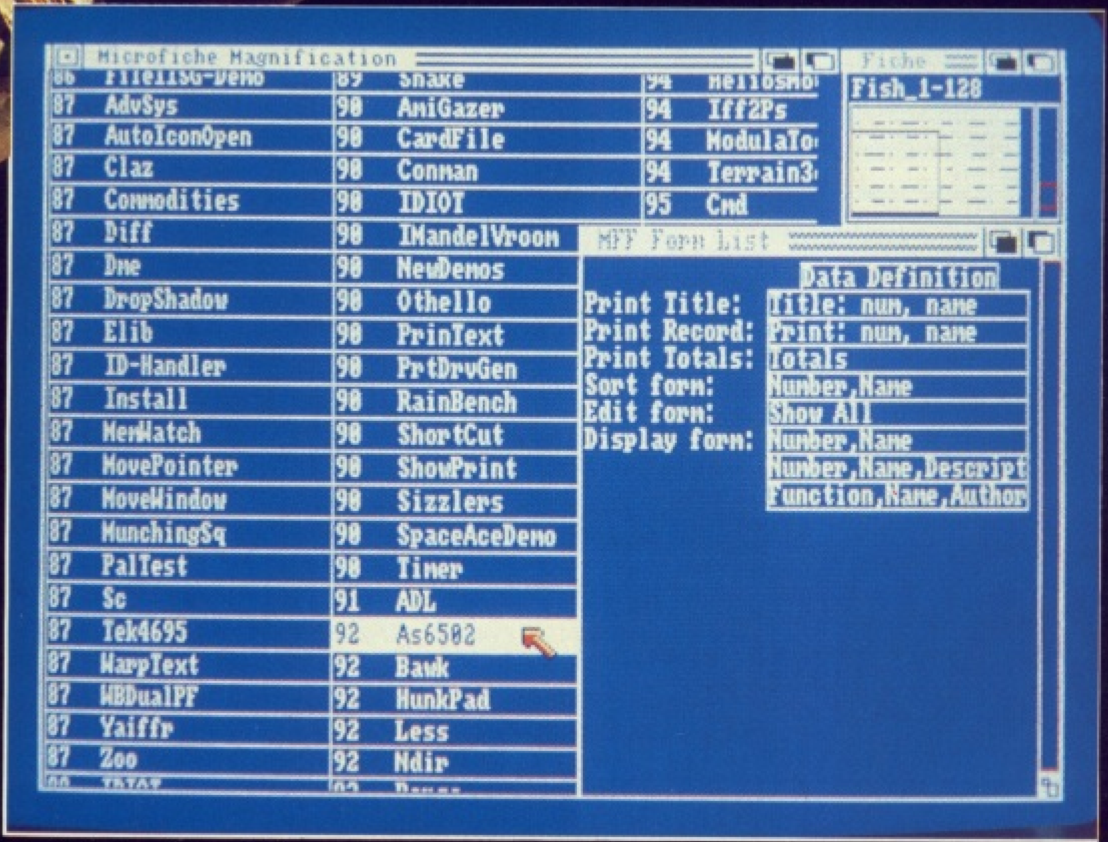
THE manual makes suggestions about closing windows and even re-booting with a copy of the original Workbench disc if problems are encountered with loading. The reason for this is that MFF is a memory-based program and both the program and all data have to be held in memory at the same time. It is therefore worthwhile freeing as much memory as possible before loading. MFF runs very well with only a single drive as the disc is only accessed when you save or load a database.

From Workbench you can select the required drawer and clicking on the required database icon will load both MFF and the database. Once loaded, you are presented with a screen with several windows already open. The main part of the screen is taken up with the microfiche magnification, which is the equivalent of the traditional screen. In the top right hand corner is a small window called Fiche, representing the microfiche transparency and below this is a third window called MFF Form List. This contains details of the available forms or views and has no equivalent in the original.

Taking each of these windows in turn, the Microfiche Magnification window contains some of the contents of the database. The exact part of the data that can be seen is directly related to the Fiche window, which is a miniature representation of the transparency, or as much of it as will fit in the window.

The window is of fixed size and a vertical scroll bar is provided to enable you to see the remainder of the database. The window also contains a smaller hollow square and this can be moved around the window. As you move it, the data in the main magnification moves proportionally with it.

One way to picture it is imagine a lot of card index cards laid out on a table and you can only see some of



The flat view is a quick way to skim through files

FLAT FILE

Flat File is one of the terms used to describe a database that only uses data from a single data file. In many cases it can be considered the computerised equivalent of a card index system, or in this case a microfiche.

The term is used to describe the fact that it is not capable of relating data in one file to data at a different level in another file.

A database that can select records from another file according to the values it finds in the current record is known as a relational database.

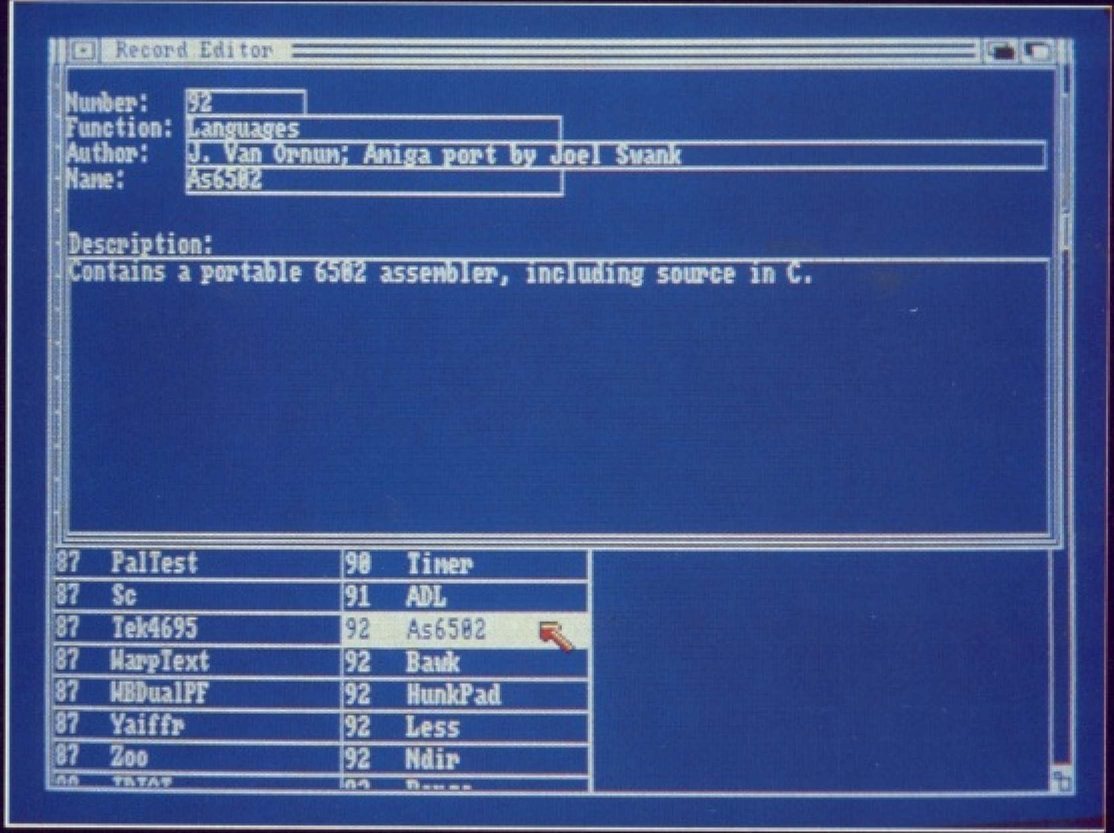
Microfiche Filer is of the flat file variety.

them at a time and have to keep moving to see others. This provides the main mechanism by which you can randomly scan the database.

The form in which the data is displayed is determined by the settings in the MMF Form List window, which provides a list of all the available forms. Forms determine the way that the data is visually presented on screen and also when printed and you can add more forms, or alter existing ones, at any time.

THE Form List window contains six fixed headings down the side and a number of boxes to the right containing the names of the various forms. The headings are Print Title, Print Record, Print Totals, Sort Form, Edit Form and Display Form. You can drag any form name into any of the boxes alongside these headings and the selected form will then be the one used to carry out that function.

In a name and address database, for example, you might have a form containing only a name field and if you drag this into the Sort Form box, then sorting of the database will be carried out in name order. Similarly, dragging a form that contains the name and telephone number fields into the display box will change the display in the magnification window to display all records showing only the name and telephone number.



An individual record can be shown

Clicking on a form in the Form List Window will open the Form Edit window and this allows you to change the layout of existing forms. New forms can be created by selecting from the pull down menu, then adding the required fields. When you select a new field, it appears in the Edit window and you can then scroll through the available field names and drag it around using miniature gadgets in the highlighted field.

The Form List Window contains a gadget to select data definition. In an unprecedented fit of honesty the manual admits that it is here primarily because they couldn't think of anywhere better. Selecting this opens yet another window and is where you specify the name of the database, together with the names of the fields.

Three types of data field are supported. Text fields are variable length, which saves valuable disc space and each may, in theory, be up to 32,000 characters long. Number ▶

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fields are essentially the same as text fields and may be of unlimited length, but they differ in the way that they are handled when searching and sorting, ignoring anything except numbers, negative symbols and the decimal point. Number fields may also be totalled.

One slight oddity is that number fields are always assumed to have two decimal places, although they are not visible unless relevant and are ignored at other times. The third type of field is Picture, of which, more later, but suffice to say for now that these are used to hold the filename of a picture.

If you want to enter a new record, you just create a blank record by selecting the option from the menu and filling in the details in the Record Editor window that appears. The layout is determined by the form selected for the Edit Form. Once the details are entered, closing the window causes MFF to ask whether you want to save the record and then automatically inserts it according to the currently selected Sort Form.

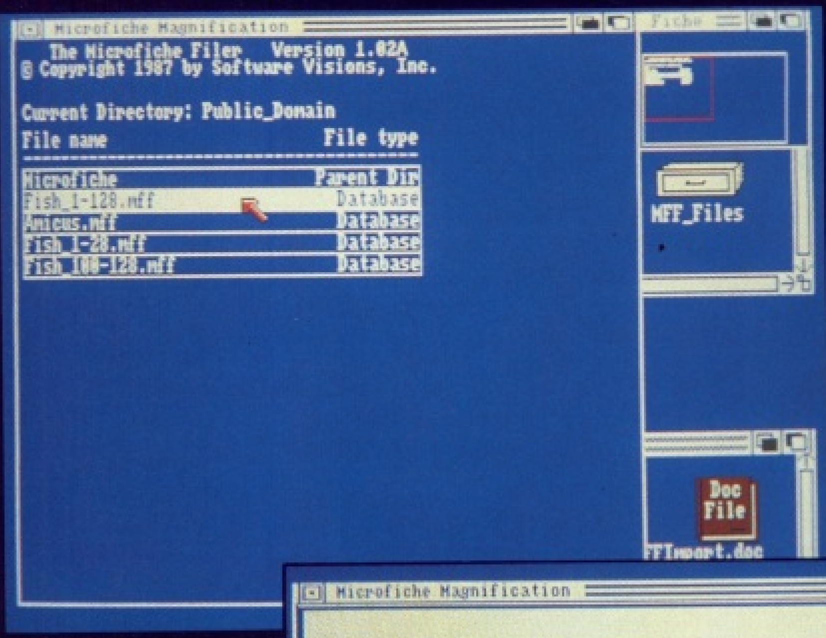
Existing data may be changed in a similar fashion and you select the record to alter by double clicking on it and the details will appear in the Record Editor.

SELECTING a range of records to print may be done either by Shift clicking on any records you want, selecting All from the pull down menu or by making use of the search options to select records that match given criteria. Selecting the latter option opens the Selection Editor – MFF certainly isn't short of editing windows of one type or another – and lists the available fields with boxes alongside. You just enter the words or numbers, together with the operators to be used.

Symbols like <<text can be used to indicate "beginning with", >>text to indicate ending with and ! to indicate NOT, as well as the normal greater than, less than and equality symbols. Additionally, & may be used to require two expressions to match in a field. Once the criteria have been entered for the various fields, closing the window makes MFF search and highlight all fields that match the conditions.

Once a range of records has been selected, they may be copied, deleted or printed. If you want to print the records, you can select yet another window to set things like the number of records to print per page, skip over for continuous stationery, and no title. From this menu it is also possible to specify that the output should go to a disc file instead of the printer. Selecting Print from the menu will execute the process.

A special MFF preference option is available from the pull down menus to let you customise the program. You can specify whether sorting should be in ascending or descending order, whether .info files are to be saved if using the Workbench environment, whether sorted data is to be displayed horizontally or vertically and other miscellaneous functions.



The top level caters for several databases



A picture from the supplied examples

MOST of the options take effect immediately, although the choice of whether two or four colours are to be used and one or two others only take effect next time MFF is loaded.

There are several ways to exit MFF, including options to go to the File Menu. This is a special MFF option and on leaving the main program it presents you with a list of the directories and databases in the current directory. You can select from these by double clicking on one, or one marked Parent Dir. If the entry is a directory, the new directory is displayed, but selecting a database will once again load MFF, but with the selected database.

MFF can be used to display pictures in IFF format and Workbench Icon pictures. The picture files are not actually incorporated into the database and when a Picture field is specified, it is used to hold the name of the picture file.

A Preference option, known as picture squeezing, is available. Squeezing is a process whereby a picture that is too large to display in the designated space is compressed so that it is displayed in reduced size. In the process, the colours are reduced down to two or four colours. Alternatively, truncated may be seleced, in which case MFF displays as much as it can and discards the remainder. Squeezing slows down the process of display and truncating is much faster. If you load a database with the squeezed option, all pictures

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will be shown in reduced size, but selecting that record lets you select an option to display the picture, in which case it is enlarged and displayed in its full colour glory.

THE more that I use MFF, the more I like it. And note that I say use rather than used, because I intend to keep it in the front of the disc box when this review has gone to the printers. It is obvious that a lot of thought has gone into its design and implementation.

MFF is entirely consistent in the way you use it. There is nearly always more than one way to do anything, virtually all options being selectable by pull down menus which vary according to the window you are in, or alternatively, by clicking on a gadget or box. There are quick keystrokes to select all options and once learnt they are displayed in the pull down menus as a reminder which speed things up considerably.

MFF isn't perfect though, and on occasions it seems to take unduly long to redraw the screen when a window closes and the little fiche window takes time to redraw, although this is probably because the program is actually manipulating a lot of data at the same time. I also wish that there was some mechanism that allowed you to save search criteria for future use, as this would save a lot of time if you have to frequently use the same search patterns when using the database.

I started using MFF thinking that the microfiche concept was just a gimmick, but as time has passed, it has proved to be an entirely practical way of using a flat file database. I wouldn't hesitate to recommend that it is worth considering if your database requirements don't demand relational files or the ability to program your own applications.

REPORT CARD

Microfiche Filer
Software Visions/Amiga Centre
Scotland 031-557 4242
£69.99

USEFULNESS
If you need a sophisticated card index type of database, Microfiche Filer is well worth considering.

EASE OF USE
Extremely easy to use and consistent in its use of commands and windows.

INTUITION
Follows Commodore's guidelines well.

SPEED
Being memory based, most features are very quick, although screen redrawing can sometimes slow things down.

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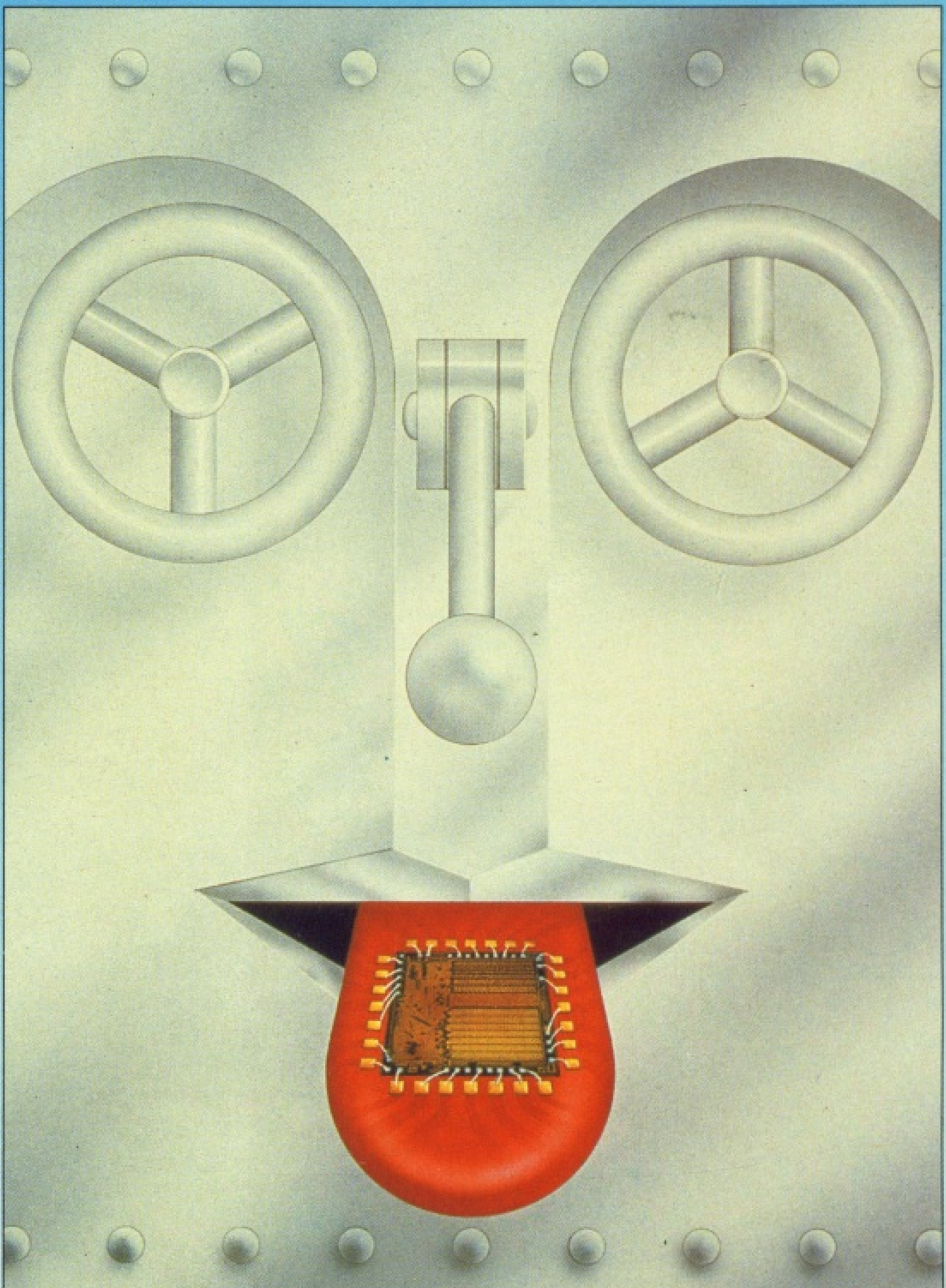
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Say it with words

Rex Last has discovered the speech synthesiser on his Amiga and ponders on its potential



SPEECH is the one means of communication we're all best at. It's far easier and quicker than the written word, sign language, Morse code, smoke signals or any other means of getting a message across which has a verbal content.

But somehow speech and computers don't appear to have got on too well together, and you don't have to dig very deeply to discover the reasons why.

The first and most obvious is historical: When people first discovered that there were better ways of communicating with the computer than flicking switches on a console, they hi-jacked the nearest available chunk of technology which could readily be adapted to the purpose, and that was the Hollerith punched card or the teleprinter with five-hole paper tape (and its more classy descendant, the eight-hole variety). Then the cathode ray tube gradually slipped into prominence as on-line interactive communication took over from paper tape or punched cards in, line printer out – usually after a lengthy delay.

One way or another, keyboard skills, whether of the two-fingered or touch-type variety, were very much at the heart of effective interactive communication with the computer, and they remain so today.

There are other more exotic modes of communication, too, like light pens and bar code readers, but the human voice and the responding computer "voice" have played virtually no role at all in the explosion of computers that has taken place in the micro age.

Why is this so? Why has it proved to be so difficult to devise a means whereby you can talk to your micro and it can respond in like manner?

THE key reason is the need for absolute precision and unambiguity in our interaction with the micro sitting on our desktop. Computers as a general rule cannot cope with anything but what are called in the trade strong algorithms and deterministic programs. This isn't the place to get entangled up in the artificial intelligence debate – I'm talking about systems and packages up and running today on today's generation of micros.

There's the very familiar story

►

illustrating this fact of life which has done the rounds in computing circles for many years. How, it goes, do you keep a programmer in the shower for ever? Answer: Give him a bottle of shampoo. And why? He – or she – will dutifully read the instructions on the label which go something like this:

Wet hair. Apply blob of shampoo. Rinse. Repeat.

We all know what it means. But the computer wouldn't – nor would anyone who thought like a machine. Both would find themselves stuck in an infinite loop, unless and until someone intervened and built in an upper limit or two on that particular iterative process.

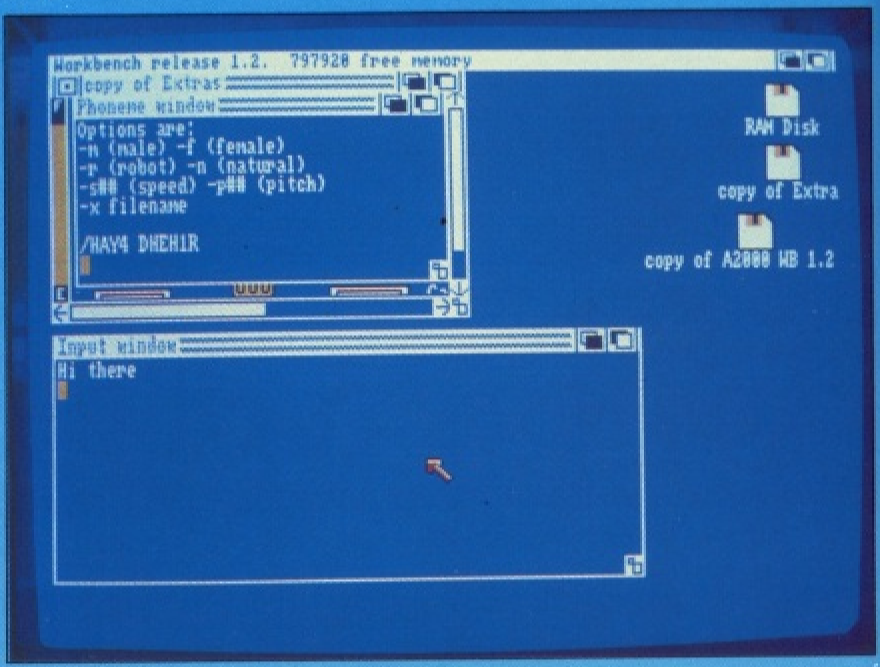
Human written communication is a rich breeding ground for ambiguities which our brains are very good at resolving by means of processes which we are still light years away from understanding. And the ambiguitiy potential of the spoken word is even greater.

Why is that? Well, as you read this page, you at least have the benefit of having gaps between the words to tell you how each bit of meaning is carved up. Ifitwasallwrittentogether-itwouldbeextremelydifficult! And that's just one of the problems in getting a machine to unsnarl human speech.

We don't obligingly speak with neat gaps between each word – it all tends to flood out in a more or less continuous stream. A sentence like "Micros cope with magnifying problems" might well be misinterpreted by the electronic ear as "Microscope ... ", especially if its program is tempted by the word "magnifying" to disambiguate the sentence in the wrongest possible way.

ANOTHER problem surrounding speech recognition is the unobliging fact that a great deal of the content of the voice is concerned not with the "meaning" of the spoken words, but with other factors such as the speaker's class, regional origin, age and sex, and whether or not he or she is angry, pleased, exasperated or whatever.

All these factors form a substantial proportion of the content of the sounds that either delight or bruise



Say can be used from Basic or Workbench

our auditory senses. So let's give up – for the foreseeable future at least – the idea of shouting commands at the computer, even given that we could formulate our words in an unambiguous fashion and not erase all our key files by having our instructions misinterpreted. Let us concentrate instead on the less demanding, but by no means trivial, side of the coin: Getting the computer to talk to us.

Early micros had tinny little loudspeakers, to reproduce the warning "bell" sound inherited from the teleprinter, and many of the mainstream machines have not fared much better. Think, for example, of trying to reproduce the full grandeur of a symphony orchestra through the feeble electronic larynx of an IBM PC. The BBC B micro fared a lot better, but the complexities of the commands surrounding sound generation – remember envelope and its clutch of 14 parameters, no less? – left most of us gasping and leaving well alone.

The Amiga, however, comes with its own built-in speech synthesiser and a pretty comprehensive command structure which is more than user-friendly enough for us to have a go at understanding the way in which it works and in putting together a few routines to make the generation of a passable speaking voice even less of a hassle.

Before we consider the snags and pitfalls, let's first get a primitive experiment up and running on the Amiga. I found the "Say" icon of the speech synthesiser lurking on the Extras disc, along with AmigaBasic, the calculator and various tools and utilities.

To do the job properly, we're going next time to dig into Basic, but for the moment just double click on the "Say" icon. It's the one with the speech bubble containing "#*?!", making it look more like a "Swear" icon than anything else. Depending on what system you have, you may well have to engage in a spot of disc swapping.

Two windows pop up: The Phoneme window, and the Input window. One thing not to do at this stage with the Input window highlighted is to press Return, since that ends you up where you started from, and you're out of Say before you've had a chance to say anything.

In the Input window, type "Hi there" and press Return. You will hear a voice speaking the words – it sounds a little as if it's trying to chew one of those doggie rubber bones at the same time, but it's quite comprehensible.

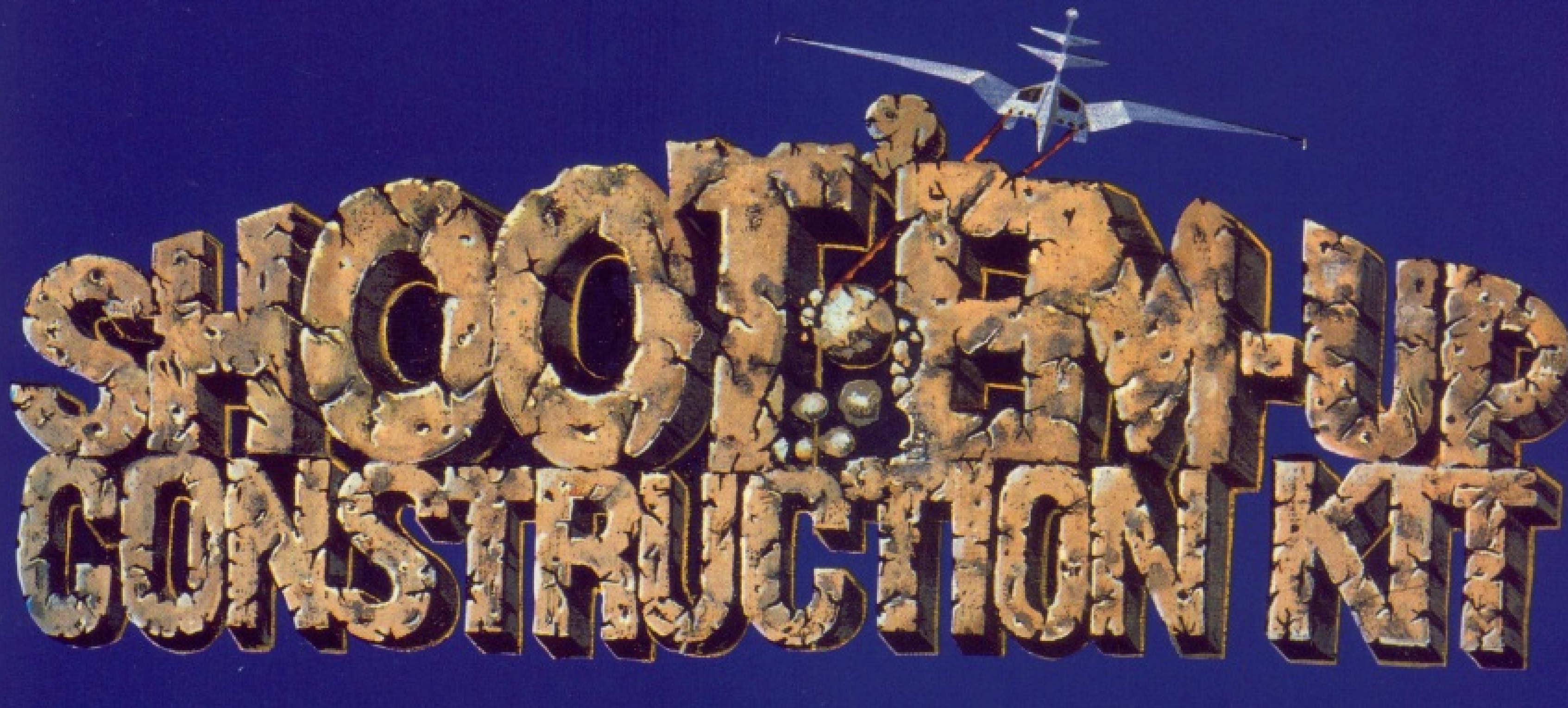
INCIDENTALLY, hands up all of you who also typed in the double quotes. If you didn't, try that too: You'll discover that the system responds with: "Quote – Hi there – unquote". So one thing is clear: It's a pretty powerful and comprehensive tool that has been bundled with your Amiga.

Raise your eyes slightly to the Phoneme window, and you will see something odd happening. Your words are being echoed – ever so slightly queerly, it appears – in the window. It looks like:

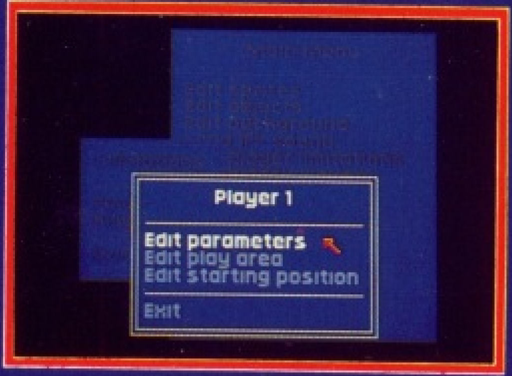
/HAY4 DHEH1R

As we shall see, this jumble of upper-case letters and digits does

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make sense, but in order to sort out the tangled threads of that output we first need to determine what a phoneme is, and why it has been built into this speech synthesiser.

A phoneme, to cut through most of the linguistic red tape, is a basic building brick of sound that goes to make up a word and hence a meaningful sense unit, or lexeme. If you think computing is overburdened with jargon, just try dipping your toes one day into the muddy waters of linguistics, and you'll see that we computer folk are not alone in that respect.

Unfortunately, there's a really large obstacle to overcome when representing the sounds of language as text on a piece of paper. It's a two-part obstacle, if you like. The first is that you don't get the same sound from the same combination of letters each time. If you don't believe me, try (a) saying the following list to yourself, and (b) running them through the synthesiser to see what kind of a score it achieves: Though, tough, bough, thought, sough, slough

The Amiga scores four out of six on my reckoning.

OBSTACLE number two is that not every letter in a word gets pronounced – French is much more of an offender in this respect than English. It seems that the rule in French is that you pronounce every third or fourth letter when you feel like it. If you type "faux pas" into Say, it comes out sounding almost as embarrassing as one of Edward Heath's efforts at the French tongue. The clue to the solution of the problem comes when you type instead: "fo par", and out comes a reasonable rendition of the French for a goof or false step.

In the last century, members of the International Phonetic Association put their heads together and invented the IPA – no, not India Pale Ale, that privilege was reserved for another striver after truth. The International Phonetic Alphabet boiled language down to a set of sounds represented by a standardised set of symbols.

But – you guessed it – many of those symbols aren't on the computer keyboard, or any standard keyboard for that matter. So an American agency called ARPA (Advanced Research Projects Agency) came up with the Arpabet, an equivalent of the IPA using individual letters or groups of letters.

So "Hi there" is represented by the following. I've put in plus signs simply to indicate where one symbol ends and another begins:

/H+AY DH+EH+R

So at the simplest level, Say takes English as she is wrote and does its best to convert the sounds into their Arpabet representations, and duly echoes them in the Phoneme window.

But it doesn't end there, as you'll have noticed. There are numbers as well as letters. What are they doing?

LET me answer that question with one of my favourite Jewish stories. The Russians call in the Israeli ambassador and berate him for some military escapade organised by Jerusalem. The ambassador states he will consult with his government, and in due course returns with a telegram which reads as follows:

You were right. We were wrong. We surrender.

The Russian smiles are soon wiped off their faces, though, when the ambassador reveals the true meaning of the message:

You were right? *We* were wrong? We *surrender*?!

Intonation makes all the difference. Change the weight of emphasis and the pitch, and the meaning itself can alter – sometimes beyond recognition. And by the same token, if you take all the intonational patterns out of speech you end up with the kind of Dalek voice that people tend to associate with computer-generated speech.

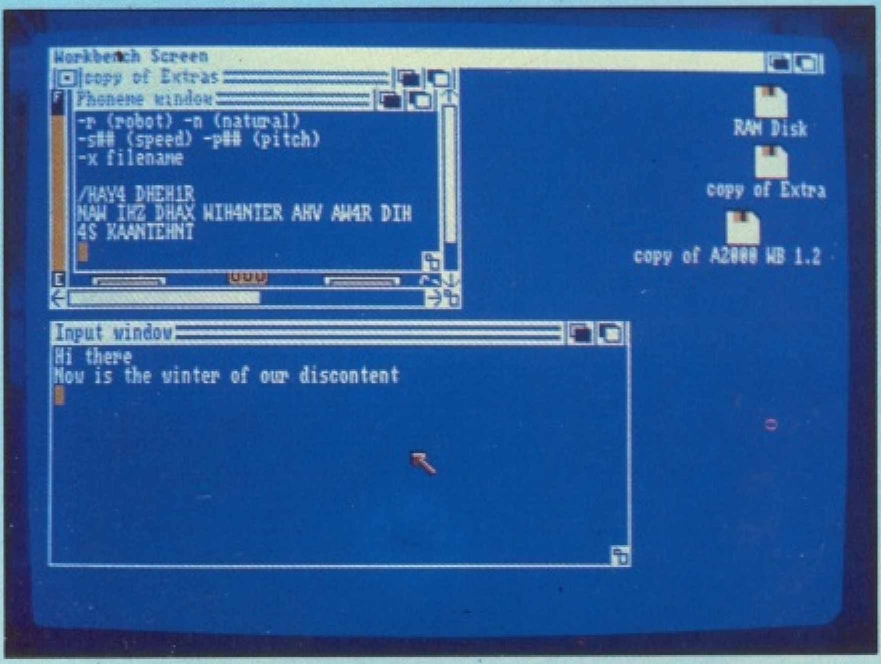
That very lack of variation in emphasis is what gives the Dalek's cry of "Ex-ter-min-ate" its sinister ring, and sends countless thousands of children scurrying behind the sofa for protection (in most cases, to join their fathers who are already there, if the truth was known).

That's what the numbers in the Phonemes window are all about, putting stress patterns into the speech. In every sentence there are words we stress and words we don't. And as for pitch, we change that in questions, where we tend to go up the scale at the end of a question: Is the train late? But in a sentence – The train is late – the voice drops towards the end.

So we are wandering into pretty dangerous enemy territory when we try to reproduce human speech on our Amigas. But wouldn't it be invaluable to have a situation in which words typed into the computer are echoed by its voice in as reasonable a fashion as possible?

There are clearly applications galore here, from spoken help information for the user to text readers for the visually handicapped. It would be a great idea, too, if the program we knocked together could be taught how to pronounce plain English and improve its performance as it goes along.

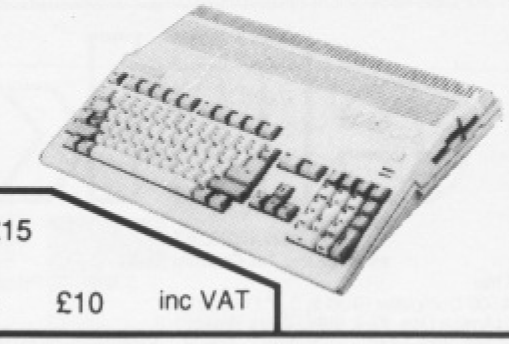
I wonder if that can be done? See you next time with the result. Now where did I put the Extras disc with Basic on it?



The Amiga can translate from text to phonemes

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A bit IFFy

The Amiga's Interchange File Format (IFF) is responsible for the way that different Amiga programs can read each others' data. Dave Parkinson presents a view of where IFF came from, where it is – and where it might be going

MOST Amiga users have heard of IFF. If pressed, they would probably say that it was invented by Commodore for the Amiga, and that it is a standard way of storing graphics images. But in fact, IFF wasn't invented by Commodore, wasn't invented for the Amiga, and hasn't got anything especially to do with graphics!

IFF is intended as a completely general-purpose way of transferring *any* data between *any* programs on *any* computer, or between any two computers. It was originally invented by Electronic Arts (of DeLuxe Paint fame), and it started life on the Apple Macintosh.

It is important not to be deceived by the Mac's nasty imitations into failing to realise what a beautiful machine it was and remains, and how important it has been in the development of personal computing. The origins of IFF are to be found in the Mac's clipboard, and the file conventions which allow data to be cut and pasted between different Mac applications. The success of this led Electronic Arts to wonder – why not generalise this? Why not create a completely general purpose format for interchange of any data between any programs, even running on different computers?

Unfortunately, this was too late for the Mac. By the time the first drafts of the IFF specification had been drawn up, the first important Mac packages were already out, all using their own incompatible formats, and with no ability to exchange data except via the clipboard. And of course, once a manufacturer has released a product using a particular file format, it has to stick to that format in future to maintain product compatibility, even if something better comes along – like IFF.

However, the timing was just right for the Amiga. Electronic Arts worked closely with the original Amiga team, trying to get some decent application programs sorted out in time for the Amiga's release. Here was a brand-new computer with no standard file format, here was a nice standard file format with nowhere to go. The two fitted together very neatly.

Commodore-Amiga adopted the idea with enthusiasm, and worked closely with Electronic Arts, refining the standard to better fit the Amiga. The Amiga was then released with IFF in place, and developers given no excuse not to use it. On the whole, this has worked out very well – nearly all Amiga packages now support at least a limited form of IFF, and are therefore able to exchange data.

A key objective of the IFF design ▶

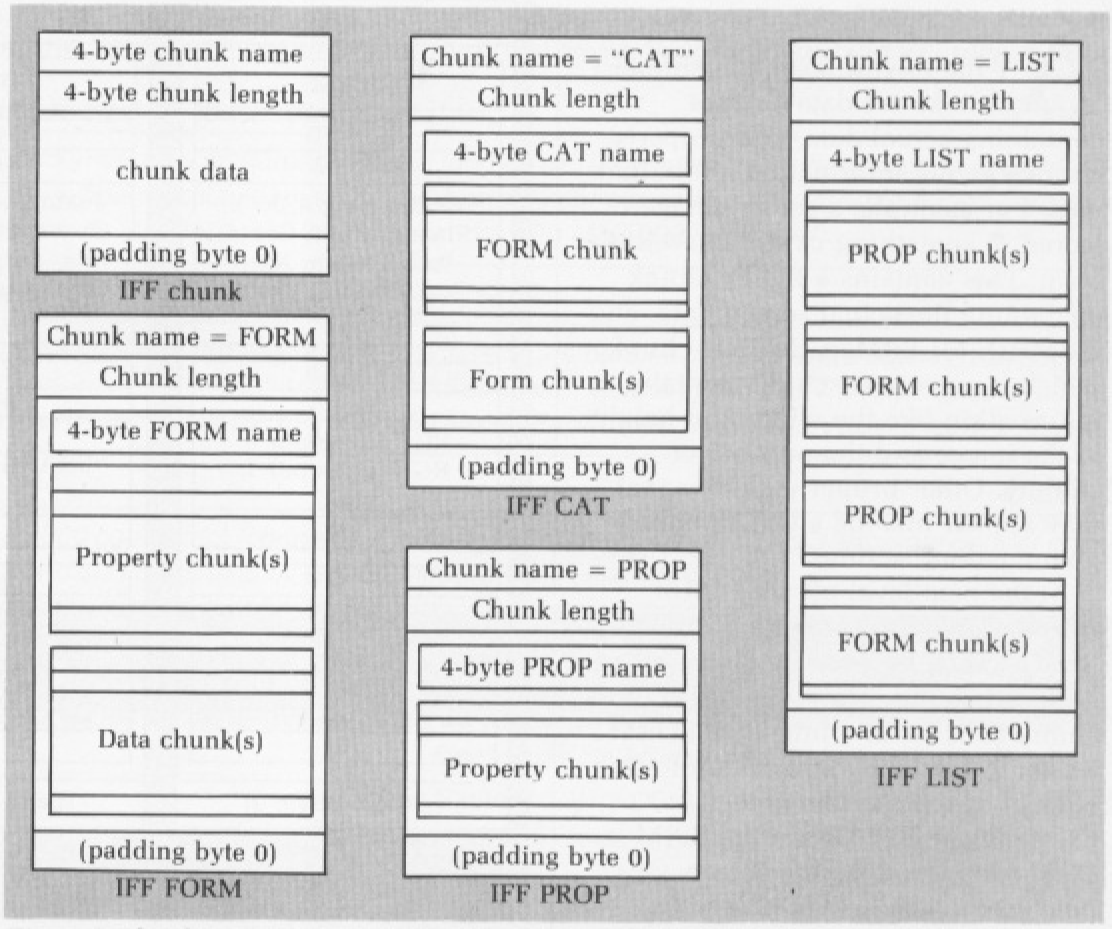


Figure I: Chunks – the basic building blocks in IFF datafiles

◄

team was to make it "future proof" – it had to be capable of changing and evolving to meet new requirements as computers became more sophisticated, and as people thought up clever new things to do with them. To achieve this, the standard had to be extendable so that people could add new elements to it as necessary. And it had to be recursive, meaning that it would be possible to build complex structures out of simple elements, then more complex structures still out of these complex structures, and so on.

The use of recursive structures is a fundamental technique in computer science, and perhaps in nature, for building up systems of potentially infinite complexity – see Douglas Hofstadter's book Godel, Escher, Bach if you want to know more about this.

The basic building-blocks in IFF datafiles are called chunks. The structure of a chunk is very simple – it consists of a four- byte name identifying the chunk, then four bytes of data length, then the chunk data. Following the chunk data there may be a padding byte of zero to keep things aligned on an even-byte boundary, which makes things easier for a 68000 processor. And that's it.This is shown in Figure I.

AT the lowest level, the simplest chunks are data chunks containing actual data, and property chunks giving information about that data. For example, a screen-image is stored in something called an RLBM form: This contains a BODY chunk containing the actual screen data, and a BMHD (for BitMap HeaDer) chunk, which is a property chunk containing information like the width and height of the image and the number of colours. Other property chunks that may appear include a CMAP chunk giving colour settings.

At the next level up are FORM chunks, used to represent complete objects, such as a screen image or a digitised sound. The data in a FORM chunk consists of a four-byte FORM name, followed by a number of other chunks describing the object. Examples of FORMs are the ILBM FORM used to describe screen images, the 8SVX FORM used to describe 8 bit digitised sound, and the SMUS FORM used to describe a simple musical score. Diagrams showing various typical FORMs are given in Figure II.

At the highest level of all are CAT and LIST chunks, which represent collections of several objects, and PROP chunks, which represent properties shared between objects. The data in a CAT is simply a series of FORMs conCATenated (joined together). The individual FORMs in a CAT are quite independent of each other – a possible example would be a number of ILBM FORMs, joined together to give a simple slide-show.

A LIST, on the other hand, is used to contain a series of objects which share common properties, these properties being contained in PROP chunks. A possible example would be an animation LIST, containing PROP chunks giving information about things like resolution and screen colours and a series of ILBM FORMs containing picture elements all sharing these common properties.

A complete IFF file consists of a single FORM, LIST or CAT. For example, the output of a graphics package probably consists of a single ILBM FORM. The output of a sound digitiser probably consists of a single 8SVX FORM – though it is of course possible for packages to be more complicated than this.

This arrangement is extendable in that you can keep on inventing new FORMs and new chunk-types almost indefinitely. It is recursive in that LISTs and CATs can contain other LISTs and CATs, while FORMs can themselves contain other FORMs, or even LISTs and CAT!

Thus a LIST representing an animation might contain "sub-animations" – representing a single moving character – contained in other LISTs. To handle this sort of thing, you need routines which figure out – parse in the jargon – an IFF file by keeping on calling themselves until they get to the elementary data and property chunks at the bottom: This is called a recursive descent parser.

AS already indicated, the current position with the IFF standard is pretty good – but it could be even better. A lot of discussion took place at the recent Washington conference about improving IFF, in at least the following areas.

First, although plenty has been

►

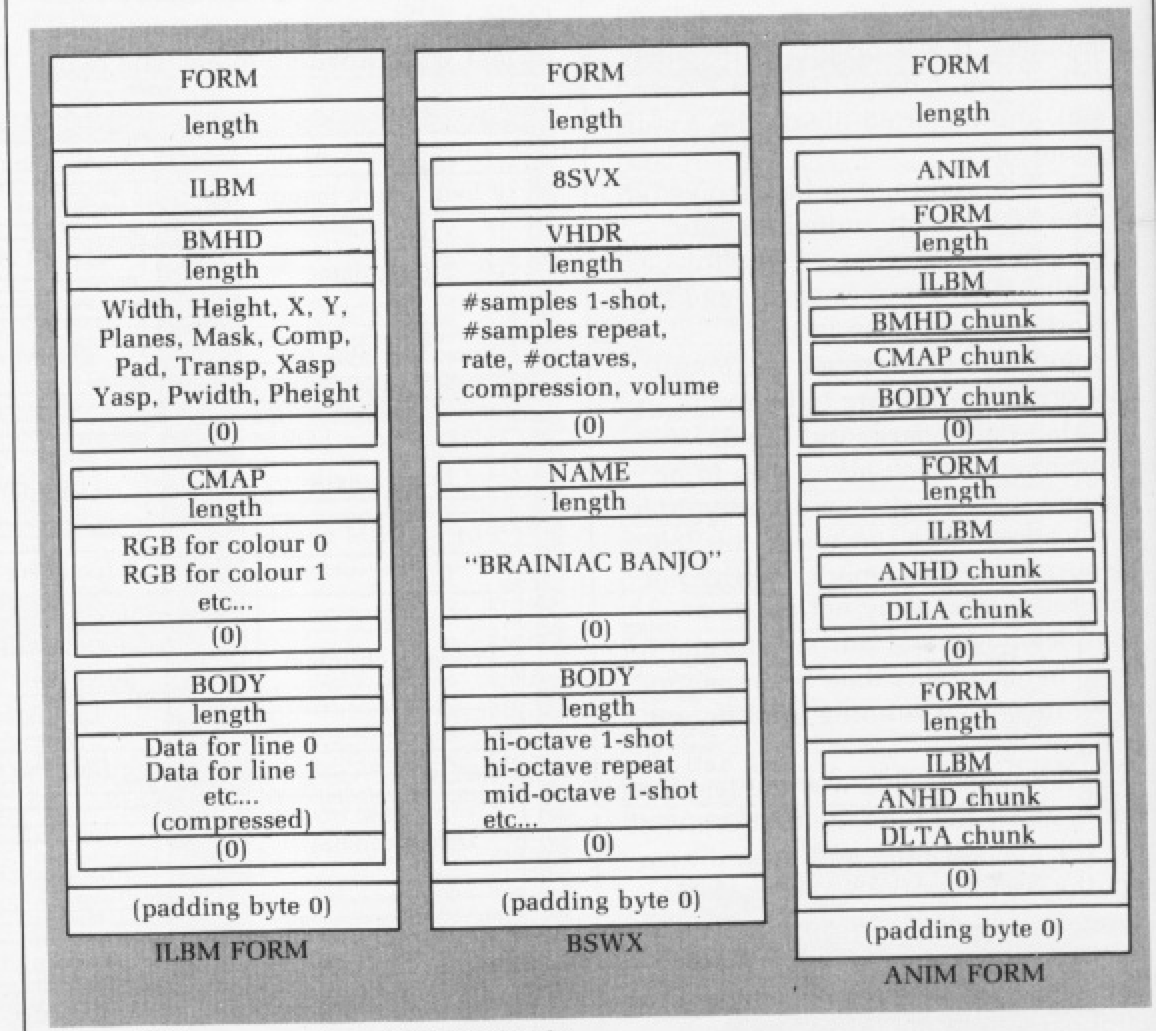


Figure II: Some examples of FORM chunks

◀ done with IFF FORMs, very little has been done with CATs and LISTs. This is probably the fault of the original IFF documents, which were expressed in rather technical language. They went on about recursive descent parsers, and referred readers to a book on advanced compiler construction if they needed an



explanation! The result was that many developers thought "the heck with that", and ignored the stuff about CATs and LISTs completely.

As a consequence of this, FORMs have been used in areas much better suited to LISTs. An example is the ANIM FORM, which is an example of a FORM containing other FORMs, which in this case are ILBM FORMs which aren't really ILBMs at all – yuk! This works, but has room for improvement.

Next, a standards committee is needed to resolve this sort of issue, and to consider more complex questions like cross-referencing within CATs and LISTs. A related important question is what software should do with "alien" chunks – ones it doesn't understand. At the moment the rule is that these should be ignored and *never* rewritten, which seems rather restrictive.

Thirdly, a lot of effort has been spent re-inventing the wheel – all programs that want to use the IFF standard currently have to contain their own IFF routines, and although "standard" routines are available on Fish disk 64, they are not very fast and people have tended to rewrite them. This has resulted in some subtle incompatibilities. There is a growing feeling that we need an iff.library and an ilbm.library containing fast standard routines for basic IFF operations. These would be shared by all programs wishing to use IFF, thus improving compatibility and freeing up code space.

FINALLY, IFF needs to spread to other computers. IFF has been adopted as the standard for 16 bit terminals on the Compunet network, and Gossamer Graphics has put IFF on the Atari ST. The result is that Amiga users can access any graphics uploaded by an ST, and ST users can get an approximation of what's possible on an Amiga. This is the sort of thing IFF was designed for – let's hope it catches on much further.

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PIONEER PLAGUE

AMIGA 1000 owners may well remember Mindwalker, a game from Commodore which was one of the first things to show off the machine, the first game to use the custom chips. Now the same programmer, Bill Williams, has produced Pioneer Plague, the first big game to use HAM. Eat pixels lesser computers!

The human race is overpopulating earth – nothing new in that – so some bright spark has invented the Pioneer Probes. These incredible pieces of human ingenuity have been created to terraform lifeless hunks of space flotsam – asteroids for instance – into habitable planets.

As each new world is completed, the probes build copies of themselves and send them to search out new asteroids to build on. Now here's the snag, with all genetically reproduced systems there's always a chance of random mutation, as Darwin demonstrated in The Origin of Species.

Mutations were something the designers of Pioneer forgot, so now there's a whole bunch of self-replicating mutants drifting around in space, bent on terraforming anything in their ken, inhabited or not, and Earth is next on the list.

The designers would just like to say they're very, very sorry. Cheers fellas, you're off my Christmas card list.

The game is split into three sections – ground attack, navigation and drone programming, all selected from the main screen which doubles as the interior view of the ship.

At first glance those with long memories might well murmur SDI, especially if you are clued up enough to know that Mr Williams' previous work was Sinbad and the Eye of the Falcon, before collapsing like a heap of cold jelly – I did.

Fear not though, while SDI was Cinemaware's (one and only) howler, Mandarin's Pioneer Plague is a veritable feast of arcade delights.

At the start of the game your ship is positioned in geostationary orbit high above the surface of an infected planet. Clicking the navigation window shows the level of infection to be low at this stage.

Click the launch window and it's



down to business. An interim screen shows the planet approach before switching to a ground display, with the LifeStar – you – drifting around. Another click launches the attack ship.

Another little something the designers forgot to mention was the probes have an in-built defence mechanism, provided just in case something got in their way.

The mutations have evolved the defence system even further – nobody's quite sure how far. This makes it necessary to shoot and bomb everything that moves until you find out what's what.

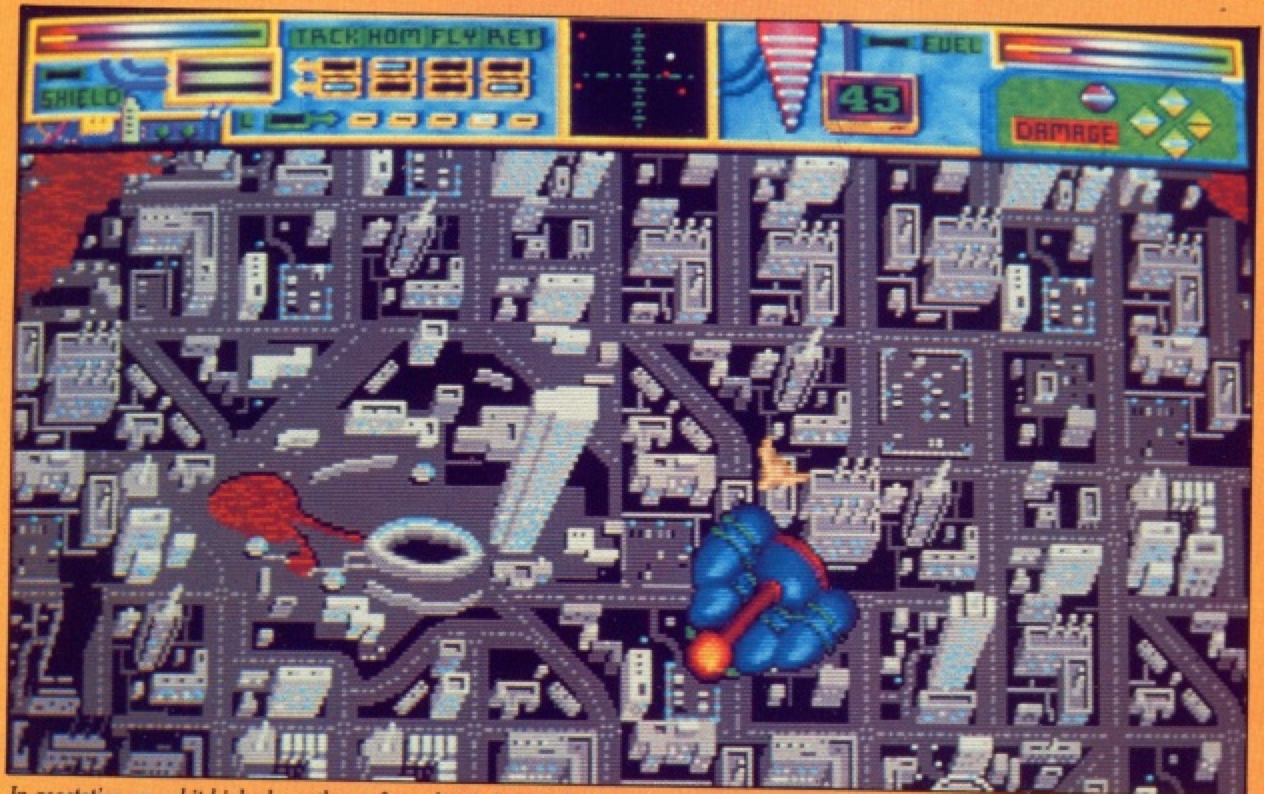
Once you clear or retreat from a planet, you have to navigate through sub-Euclidian – attack of the jargon psueds – space to get to the next one. This is used as a poor excuse for a stunning sequence, reminiscent of Star Trek The Motion Picture, where you fly through a worm hole while trying to shoot the image of the planet as it whistles around the hole. Tricky stuff, because the longer you spend in space the more the probes spread.

Pioneer Plague is an unusual and well thought out game that refuses to take itself too seriously. HAM mode graphics are used throughout, not just on the loading screens, which adds a touch of class. In play it's fast and challenging, but never too hard.

Definitely one for the Christmas shopping list – every Amiga should have one.

Karen Adams

AMIGA COMPUTING Excellence



In geostationary orbit high above the surface of an infected planet

Pioneer Plague
£24.95
Mandarin Software

Sound
Graphics
Gameplay
Value

Overall – 87%

DALEY THOMPSON'S OLYMPIC CHALLENGE

YOU can't help but admire Daley Thompson. Injured by bad luck and a faulty pole, he lost his bid to be proven the world's finest Olympic athlete.

Now, somewhat prematurely perhaps and with the aid of Pete Johnson and the team at Ocean, we can all have a crack at reliving dishy Daley's victories past, and perhaps set a few new records into the bargain.

And so to the gymnasium. This is where the game begins to flex its and Mr Thompson's muscle. Training is a simple matter of doing some jerks and squats – that's sporty lingo for lifting a few weights – but to add to the difficulty you have to keep up the exercise for a full four minutes.

This means a lot of joystick waggling, making the simulation painfully realistic.

During the session the main portion of the screen depicts an animated digitised image of Daley doing his stuff, while smaller peripheral windows show your current energy level and time remaining. The energy meter is a bottle of Daley's favourite thirst quencher, and as the bottle fills it's replaced by a can of – yes the very same.

Cans are used to provide extra energy in your weaker events, so a full complement is useful.

Finally you're ready to enter the competition. This is split over two days, with five events each day. An intermediate screen depicts a computerised scoreboard showing the next event.

It's here that Olympic Challenge falls flat on its face because you can't choose which event to compete in next. This means if you get knocked out in say, the ninth event for whatever reason, you'll have to start again from scratch.

The games consist of four running events plus all the field trials like discus, javelin and long jump – so there's plenty of variety.

There are some fantastic animated sequences of a digitised Daley doing his stuff, and intermediate digitised stills while each event loads. In fact all of this is quite breathtaking. At the expense of all this prettiness is screen ergonomics.

A typical case is the 100 metre sprint, which has no less than seven sections all displaying information at once. Fine up to a point. But the real action, down on the track is shown from a viewpoint you might get from a blimp floating hundreds of feet above the stadium.

At the end of the day I concede defeat. I tried to get to like Olympic Challenge, but failed. It's just too hard to be credible. That, coupled with needless comments about being disqualified and sent home in disgrace for choosing the wrong shoes, leads me reluctantly to suggest you avoid this one. Sorry Daley.

Kathy Forester



Digitised Daley does his stuff

Daley Thompson's Olympic Challenge
£19.95
Ocean

Sound
Graphics
Gameplay
Value

Overall – 47%

FUSION

FUSION from Electronic Arts is the first British title to be released on that label. If you played the game for five minutes you'd ask yourself why EA bothered to sign it up.

On first impressions it looks like the good old standard game of wide-scrolling-landscape-with-ship- rolling-around - and-killing-anything-in-sight. I thought so at first, and as this type of game, it's quite average. You have a small crawler vehicle, with a smaller cannon, which moves quite slowly over the very pretty graphical back drop using the Amiga's extra half-brite mode for a wider range of colours.

You'll quite quickly find a mother ship in which you can fly around the landscape and start blowing away the various aliens, missiles, cannon turrets flying and driving pods. If you don't know what you are doing, you'll quickly be bored, and probably dead.

This is where Fusion's biggest problem lies. Hidden on the landscape are switches, in one of two colours and many shapes.

By using the small crawler vehicle you can flick the switch, and somewhere else on the landscape, an obstacle will vanish or a gate to another screen will open. But if you flick a switch of the same colour, the effect of the previous switch is undone. You can't just open all the gates and you have to plan which switches you want to get on to other screens. That's not the end of the problem though.


It may look like an action game, but underneath is a puzzle

The mother ship can only land in certain locations, and this leaves the crawler with a dangerous journey to wherever the switch is. This, I've found, means planning the crawler's journey adopting a scorched earth policy en route.

Wreaking such havoc becomes easier once you have picked up the extra weaponry that is available for the mothership, but the crawler will always be vulnerable, and finishing later screens can mean travelling a route totally surrounded by turrets and missile bases.

Once you've done that you can start using the switches to assemble a bomb, parts of which are scattered through the landscape. The landscape is a mapper's delight and figuring out the switch combinations will keep a lot of people puzzling.

Fusion is a different game, trying to evolve the traditional shoot-'em-up and add a puzzle behind it. Because it looks like a shoot-'em-up it doesn't maintain interest as such. It doesn't have the immediacy of many arcade games, and puzzle-lovers may not look at it because it looks like a shoot-'em-up.

If you are either of these types of players, Fusion is worth an extended play, if only to scratch at the depth that actually is there.

If I had to quibble with it, I think I'd have to complain about the 30 lines smaller than NTSC display which makes it feel like the game area is more cramped than usual, and the fact that when you save a game, you can only save one game at a time, and when you load up the game it resets all the aliens.

Bullfrog should do something about this, get rid of the cryptic score system, and maybe add an able-to-land indicator for the mother ship. Fusion's worth a look though.

Fusion
19.95
Electronic Arts

Sound
Graphics
Gameplay
Value

Overall – 73%

ROCKET RANGER

AND it came to pass that the great Gurus of the technical department finished their mighty labours, and the Amiga was created. And they summoned the Men of Marketing, and said: "Behold what we have done. A computer with graphics greater than the Beeb of Beelzebub; sound more sampled than the Spectral Bleat, verily we have produced a games machine that will cause the eyes of the people to open wide with astonishment".

And the Men of Marketing went forth and multiplied, and brought the glad news to the people. And the people said: "Wow!" And on the second day, the first game was produced, a quick rip-off of Space Invaders. And loud was the wailing and gnashing of keyboards across the land.

"Who will deliver us from these wares of naffness?''", asked the people? And it came to pass that, many years later, there came a game that took the Amiga and shook it till the chips squeaked. And the name of that game was Rocket Ranger.

Here endeth the first lesson.

But what is Rocket Ranger? It's a game that's trying to be a film. This is obvious from the start, where an animated sequence describes the scenario that you, Rocket Ranger in person, find yourself in.

History, it seems, was wrong: The Nazis won WWII more than 100 years ago. But now unnamed agents have sent you a rocketpack, wrist computer and radium gun. You have to go back in time, fight and finally defeat the jackbooted menace of National Socialism. The game revolves around Lunarium, a powerful element that is both fuel for your rocket and an essential component of the bombs that will ultimately seal the fate of the free world.

The Nazis are bringing supplies in from the Moon; you have to stop this by assembling and fuelling your own spaceship from bits found around the world.

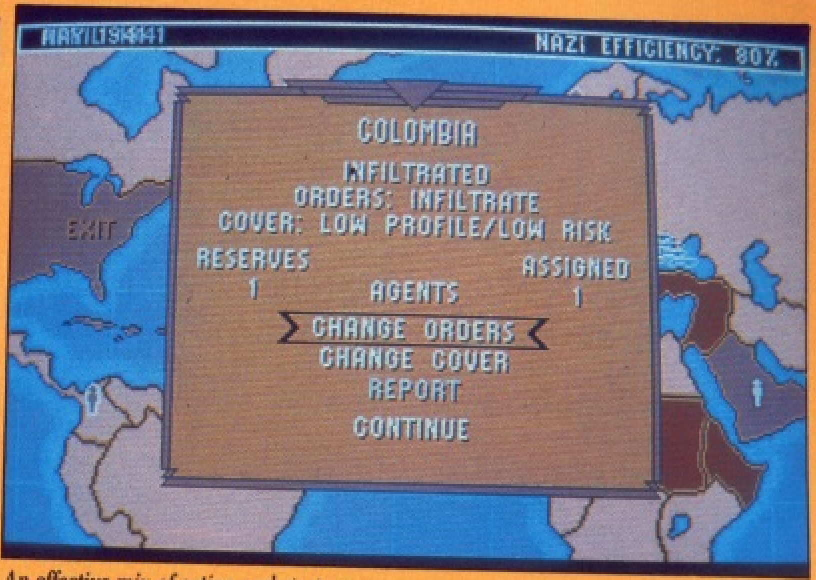
Information about the state of the world comes in from a network of spies that you control. These can just act as passive espionage agents, or at your command actively promote insurgence in enemy territories.

You fly around the world by selecting a country, fuelling your rocketpack from the limited supplies at your Fort Dix HQ, and battling past such resistance as you find when you reach your destination. This can include aerial dogfighting, fisticuffs and sharpshooting on the ground.

Once local forces have been defeated you can damage the Nazi war machine, pick up more fuel or more parts for the spaceship. If you can assemble that before you either die, run out of Lunarium or die as the Nazis take over America you can get to the Moon and strike the final blow. Your only weapons are your pistol and yourself.

Now this might not sound much of a game, but that's like saying Beethoven's Third would make a good TV jingle.

Take the soundtrack. A strong theme tune, multipart sounds synthesised, not sampled. Loads more throughout the game – uplifting for victory or downbeat for disaster, all of it high quality both technically and musically.



An effective mix of action and strategy

Some samples are used for spot effects, but everything is synchronised, sequenced and mixed to a tee.

The graphics – ah, the graphics! It's not just the quality of the pictures, or the sheer amount and variety, or the little visual jokes that pop up when least expected. All these contribute, but the overall effect is compelling.

There are lots of gaps between action; on every other game I've seen these soon become boring, but Rocket Ranger kept my interest night after night.

The gameplay is stronger than it might appear, too. There are eight action sequences where things have to be shot, zapped or punched, but the various countries have to be visited in the right order.

Time runs out fast and, as the notes suggest, no game lasts longer than about an hour. All the time the advance of the Nazis has to be watched and your agents controlled

Everything falls together. The little touches of typography and layout that breathe the 1940... the flight sequences... the deadpan humour. The only small fly in the woodpile is the lack of a constant onscreen display of Nazi strength and the passage of time.

Rocket Ranger comes on two discs, but unfortunately can't be installed on a hard drive. On an unexpanded A500 the disc swapping can get a little tedious, but it's far better thought out than many.

This game shines out from the indifferent conversions, hackneyed shoot-'em-ups and unimaginative games that infest the marketplace. This one will run and run.

Rupert Goodwins

Rocket Ranger
£29.99
CinemaWare Mirrorsoft

Sound
Graphics
Gameplay
Value

Overall – 92%



Nowhere is safe from the Nazi menace

FERNANDEZ MUST DIE!

YOU have twenty seconds to describe FMD, starting... now!

"Ah. Um. Well, you're this soldier blob, see, and you drive this jeep into an enemy base, right? And then you shoot all these other soldier blobs with what look like pingpong balls but are in fact high velocity bullets but they can't shoot you while you're in your jeep.

"They can set fire to it, when you have to drive through a carwash to put it out. Errr, and then you have to get out of the jeep and walk up to a building and attach some dynamite; the door then explodes and you can get the gold, bullets or prisoners inside.

"Err. There are eight enemy bases. Get 'em all, and then get the junta blobs, and you win. Die eight times in the hail of balls and you lose.

"Err.

"Oh yes. You've got some rockets, which can blow up trees. This is important, as sometimes the enemy blobs hide in trees. Um. The enemy also have big tanks which blow up when you hit them three times. There's a train, and jeeps, and, er, and, er, boats".



Scrolly, shooty, scarey

Beep beep beep beep. Well done. Next question. Is it any good?

"Er. Well, the houses move about quite smoothly – this must be the suberb animation mentioned in the press release – the soldiers sort of mill about in a random way shooting everything, so its a bit random whether you survive. But keep moving, and you'll be OK.

"The graphics are a bit small, but there are a lot of them. Collision detection is a tad dodgy – stand next to a hut and you can't be hit.

"Sound... the sort of samples that got Ben Johnson into trouble. It go bang. It go whoosh. It go quiet when you turn the volume down.

"Gameplay. Shoot and be shot.

"What was the question again?"

Is it any good?

"It's as good as the last soldier shoot'em up, and the one before that, and the one before that... and it's probably just as good on the Spectrum".

Which is to say?

"Er..."

Rupert Goodwins

Fernadez Must Die!
Image Works
£24.99

Sound
Graphics
Gameplay
Value

Overall – 37%

BATTLE CHESS

THERE are precious few games that really make the Amiga sweat. Many are simply ported directly from the Atari ST, or worse, are lackluster conversions of 8 bit titles. Discerning Amiga owners, therefore, especially the chess playing ones among you, will be reassured to hear that some companies are prepared to invest their time and money in taking advantage of the additional graphical and sound capabilities their machine has to offer.

Such a company is Interplay, creators of the now legendary Bard's Tale, which has turned its redoubtable talents to the creation of what has to be the most graphically stunning chess game ever conceived.

Battle Chess is more than just a chess program, it's a work of art. The beautifully marbled board is viewed from behind and above your pieces, from a more elevated viewpoint than is seen in most other traditional 3D chess games.

Each piece has been painstakingly designed to look so realistic that you could almost reach into the monitor and move it by hand.

Rather than slide clumsily from one square to the next, the pieces come to life and walk to their destination. Each piece is animated in a different way to bring out its own character and importance in the general scheme of things.

The knight, for example, heavily weighed down by his armour, clanks laboriously to his destination, while the Queen, complete with wiggling backside, glides gracefully across the board in true regal fashion.

But my favourite is the rook which, when not moving, appears as a castle tower constructed from huge blocks of stone. When called upon to move, he metamorphoses into a hulk-like creature which stomps from square to square with all the finesse of a JCB.

And what a feast of animation and sampled sound effects the battles are. Each piece has its own method of combat commensurate with its character. The knight fights with a sword, the castle rock-monster hits people over the head and even resorts to eating the queen!

The bishop brandishes his staff, while the queen raises her hands above her head before casting one of a number of awesome spells on her victims who get fried to a crisp, reduced to nothing more than a heap of charred bones.

The battle sequences are both realistic and humorous. The knight-takes-knight battle in particular is hilarious, having been plucked shamelessly from the guardian of the bridge sequence in Monty Python's Holy Grail. Other battles end with a piece being butted in the groin or falling down a hole which suddenly appears on the square it was occupying.

For those who want to dispense with the "distractions" of the battles, a standard 2D board can be called up from the pull down menu which is actually a scroll suspended in mid-air by a pair of flapping angels.

Other features include nine skill levels, modem play, and 20 famous games that can be loaded and reviewed in either 2D or 3D.

Although Battle Chess will prove a worthy opponent for the majority of casual players, it falls short of the high standard set by Chessmaster 2000 on the Amiga and Psion Chess on the ST.

So, if you fancy yourself as a chess whizzkid and want a tough game Battle Chess may well disappoint. But for average players it will not only prove itself a worthy opponent but a rare graphical and audio treat too.

David Bishop


A rare graphical and audio treat

Battle Chess
£19.95
Electronic Arts

Sound
Graphics
Gameplay
Value

Overall – 77%

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ZYNAPS

IN days long since past there was a game called Scramble, where the player was cast as pilot of a rocket ship charged with blasting his way through an underground complex. It was the first arcade machine to boast sideways scrolling, but featured precious little else. Recently the Scramble theme has been revamped by dedicated systems like Salamander, Nemesis and Vulcan Venture.

And so let Zynaps enter the Amiga software arena. One of the first sideways scrolling games to appear in a market already flooded by vertically scrolling ones.

From the start the layout looks very Salamanderish, with the screen rolling past and the first wave of alien life forms squirming on, ready to release plasma bolts of death upon the intruder. That's you.

If the baddies are the first thing you'll notice, the pathetic response speed of the ship will be next, because if you don't blast the first nasties pronto it's curtains.

Of course the dedicated gamer should have little difficulty despatching the first lot, catching and activating the first energy bonus – a speedup, which makes the ship several times more responsive.



Only the graphics save a poor 8 bit game

Without this the game is almost impossible, since the enemy's homing plasma bombs are devilishly hard to avoid.

Holding down the fire button while collecting the energy pod activates an item. This unusual method saves the trouble of pressing a key, but it can keep your trigger finger busy when the action starts to hot up – and it does.

By collecting more energy pods along the way the type of weapon changes, going from extra speed and pulse lasers right up to seeker missiles. Mean beasts these, taking out almost everything in sight, and what's more it's possible to have several on the go at once.

As the first level progresses the tunnel starts to narrow significantly, making life very tough going, since bashing into any static object inflicts a nasty case of death by destruction.

Staying with the Salamander mould, at the end of each level – there are 14 all told – is a mother ship. Hideously well armed and well protected it has to be destroyed before progressing further. To add spice, the mother ship gets bigger and meaner with each level.

Sadly, Zynaps fits rather uncomfortably into the "what might have been" category. I'm not saying it's a bad game – but much of the original leg work seems to have been carried directly over from the ST version.

It would seem, in fact, that the game was never destined to take advantage of the Amiga's superior sound and graphics. Although the music sounds very Jean Michel Jarre, the game sound is too little simplistic for my liking, with no voice synthesis in sight.

When compared with Anco's blisteringly fast budget title, XR35, it is overpriced.

Mark Smiddy

Zynaps
£19.95
Hewson

Sound
Graphics
Gameplay
Value

Overall – 66%

ZOOM

ZOOM should bring a whiff of nostalgia to those gamesters of maturer years. Longer ago than I care to remember there was an arcade game which involved racing round a two-dimensional grid made up of blank squares – Amidar, I think it was called.

Assorted creatures infested the grid, determined to make life difficult for the player. The aim was to avoid the pursuers and try to pass over all four sides of a square, whereupon it would be painted in. The ultimate objective was to join up each and every square on the network.

At heart, Zoom is that game, dressed in new togs. The flat grid has gone three-dimensional, the game can be played alone or with another player – alternately or simultaneously – there are umpteen varieties of bizarre nasties chasing you and various other embellishments have been added, including sampled sound effects.

The hero of the game is Zoomer, a PacMan style character. As he dashes around, he paints in any lines that he passes over. He must join up all the squares on the 3D grid before he can attempt the next level. There are 50 screens to be conquered.



Zoom – Amidar goes 3D

Doing their best to stop Zoomer are a wide variety of bizarre beasts, most notable of which are the deadly Jaggernauts (blond-red, flapping lips – no need to spell out the allusion here), the Wormlets (rubbery green creatures who rub out any painted lines belonging to an incomplete square) and the fast moving Angleheads.

Black holes pop up at random, swallowing Zoomer if he happens to blunder into one. The enemy doesn't have it all its own way – Zoomer can lay a trail of bombs as he goes.

Inanimate objects strewn around the grid can be helpful. Candy gives him a short burst of speed, apples earn four bonus squares, ice cubes freeze the enemy to the spot while a tube of glue slows them down.

A mystery object in the shape of a question mark may reward or punish Zoomer. Best of all, a rocket enables him to leap to the next level.

Graphics are very good, with the three-dimensional effect working well. Animation is smooth and competent and quite humorous in places. This is an entertaining game, presented with much sparkle and polish. There's a large variety of grids and many fast and furious aliens to keep the adrenalin flowing.

Zoom's problem is that it is just too tough, even on the lower levels.

If you have fast reflexes and a quick eye, this could be just the game for you. Others a touch slower with the joystick might find Zoom more frustrating than entertaining.

Bob Chappell

Zoom
£19.95
Discovery Software International SDL

Sound
Graphics
Gameplay
Value

Overall – 69%



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Specialist treats a virulent Virus

VIRUS is infectious and the doctor with the antidote is Gary Sheinwald. He has put together a comprehensive set of tips.

It is perhaps wise to describe Virus as two games. The first is trying to keep your hoverplane airborne for more than a couple of milliseconds, and the second is the one you bought the program for in the first place – killing the nasty aliens, stopping the spread of the virus and watching that incredible landscape roll by.

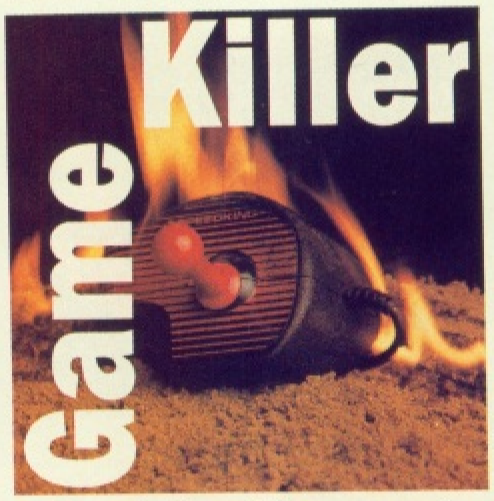
Your Amiga has two mouse buttons – the right one is your laser gun, and the left is the hoverplane's vectored thrust control. This is the one that seems to cause many people – and other life forms such as editors – a bit of a problem.

In the words of Mr Waters, learning to fly is the difficult bit. Keeping the mouse central on your mouse mat, desk, floor or YOP scheme employee, hold down the thrust button and, hey presto, the hoverplane takes off. Don't move the mouse. You'll shoot off somewhere.

Now is a good time to practice landing, which you'll have to do when your fuel runs low. Gently let the craft down, using small amounts of thrust until it settles. Wasn't that easy? Now for flying around – just the same, but different.

TAKE off so that you're clear of the trees and houses, but not too high up, and push the mouse forward so that the Hoverplane is at 45 degrees to the ground. Now hold down the thrust button and the ship will start moving away from you. Release the thrust button and let gravity pull you down again. To bring the craft level, pull back on the mouse until it is square with the ground. This is the basic principal of flight.

To turn around move the mouse left



By Max Tennant

or right – the plane will pitch over and turn in the desired direction. Then begin to tip the nose. Once you are facing in the direction required, press the thrust button.

Remember not to move the mouse too quickly – and not too far – you actually have to move it a very small distance for complete control. One problem you'll get into is flying upside down, heading towards the ground. Don't panic. Move the mouse back in the opposite direction to your last movement – rule two – don't forget the last direction you moved

VIRUS FAX

- **There are 15 real levels; after that level 15 is repeated with gravity increasing each time and the map changing every five levels.**
- **The map is a torus. Fly off the edge to take short cuts.**
- **Don't move the mouse when paused. You'll probably restart upside down.**
- **Although you score 40 points for shooting each infected tree the explosion you cause spreads the virus, so only shoot trees where the ground has already been infected.**

the mouse in – remembering not to shift too quickly.

The hoverplane should return to its upright position. Then, and only then, hit the thrust button to get out of danger.

Flying upside down is an artform – it's great fun. Another neat trick is hovering above the sea. It is a matter of practice with the thrust button, so you can sit just a pixel above death and watch the fish jumping happily around.

Once you have won your wings you need to learn how to win at the game.

At the beginning of the first level the first thing most people do wrong is take off. Don't. Wait until you are refuelled before leaving the pad.

LOOK at the map and find the nearest Seeder, represented by a light blue blip on the scanner. Fly towards it until you make visual contact. Dog fight by using the shadows – no, I didn't know Hank Marvin was in this game either – they make it much easier to work out the distances between craft.

Fly as close as possible, slightly above and to one side of the Seeder. This is because if you are above the alien you have to point your nose down, which means the vectored thrust will keep you aloft. When you are sure of a kill, fire one shot. Each bullet costs you a point, so only fire indiscriminately in the most dire of emergencies.

Watch out for Drones shooting trees. These mutate from the regular red and brown spaceships which behave rather like low power hoverplanes to red and purple mutant drones which will head straight for you. So listen out for the sound of a drone firing at foliage to know when it is trying to mutate. You don't get any such warning from Fighters.

These move in a similar way to mutant Drones, but need to be shot twice. Fighters can give as good as they get, so don't worry about wasting a few shots in your attack.

Even trickier are the Bombers. When you hear the whine of jet engines fly towards the source and try to get behind and slightly above your quarry. Bombers are difficult to hit, so fire like crazy, and don't worry about the cost in points. It is a good strategy to kill the parachute bombs first, since they are the major spreader of the virus.

Pests are nasty little things who home in on you, firing an incessant barrage of bullets, and will crash into you kamikaze style. Since Pests accelerate towards you as they come in to attack it is possible to use their momentum to your advantage.

Find somewhere on the map that is close to sea level but surrounded by hills or trees, and hover, waiting for the Pest. When it zooms in, with a bit of luck it will crash straight into the ground.

Once you have progressed through a few levels you will meet an Attractor. This is a ship which pulls you towards it. Rather than trying to escape, use its force to your advantage. Fly towards the Attractor, slingshot round using the extra force it provides, then turn and shoot.

The mystery craft is the biggest foe. It is a space battlecruiser which launches a stream of pest-like mini-fighters, which make attacking the craft difficult. Not only do you need to swat the mini-fighters, you can't use a missile on the cruiser because your weapon might lock on to a mini-fighter instead.

THANKS Gary, and I must also thank Matt Peck and Sally Pritchard for their programs and maps which unfortunately have proved too long to print. Another mouse-moving superhero is Dermot Smurfit from Surrey. He has some hints for StarGlider 2.

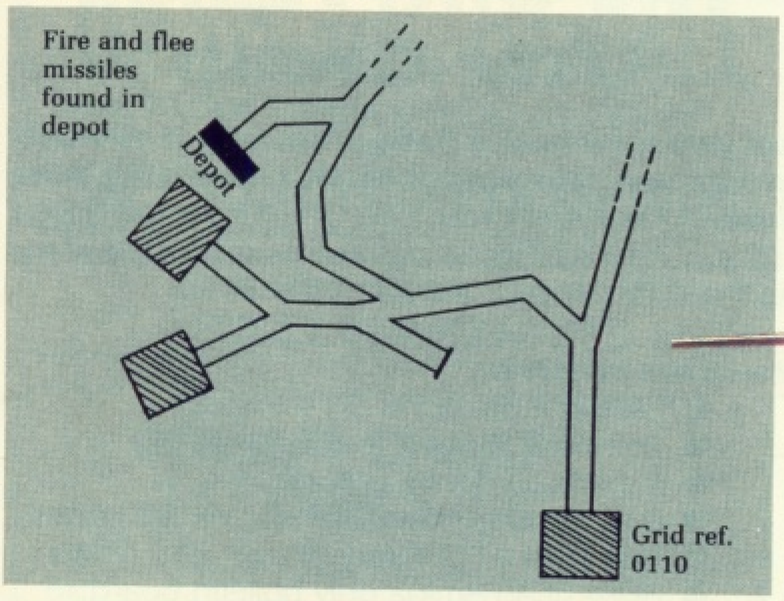
Find Professor Taymar early on. He will install a cuboid launcher. You get Fire and Flee missiles from the depot on Broadway and the Bouncing Bombs you will need for destroying projector bases on Castron. The maps show how to navigate around the tunnels.

The best place to re-fuel is Castron because it is small and the power lines can be found quickly. Before going there visit Enos to collect a petrified tree. This can be swapped for a crate of Castrobars on Castron.

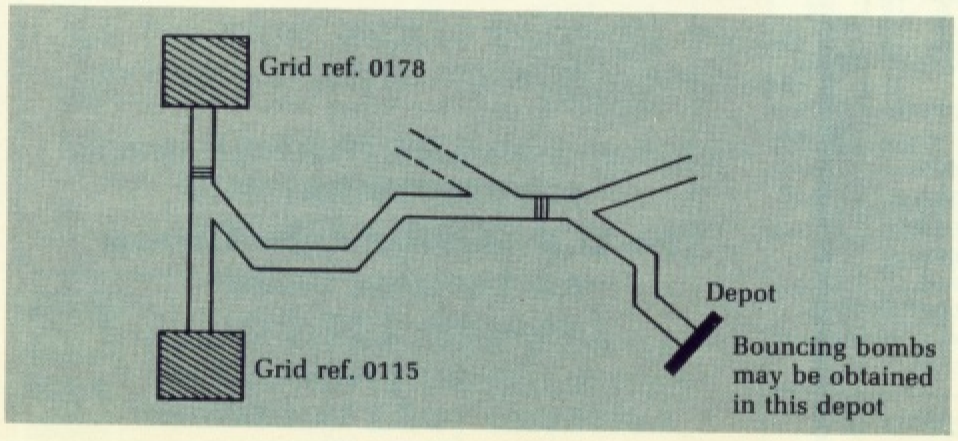
Some of the objects on your shopping list are just lying around if you know where to look. Crates of Vistan wine litter the surface of Vista, mini-rockets can be found on any heavily Egron-occupied planet and clusters of nodules can be found on Dante. But some things require a

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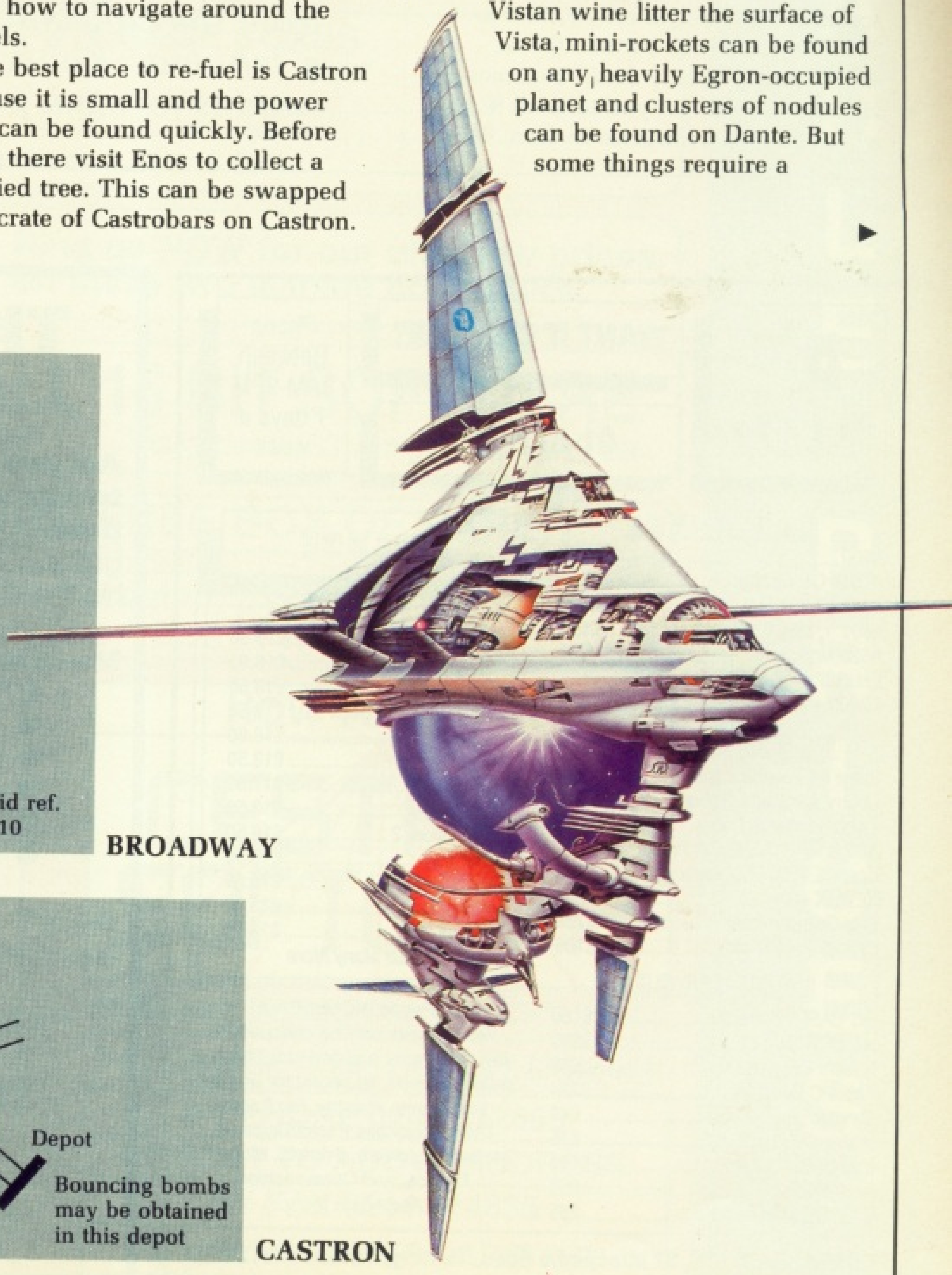
TUNNEL SYSTEMS



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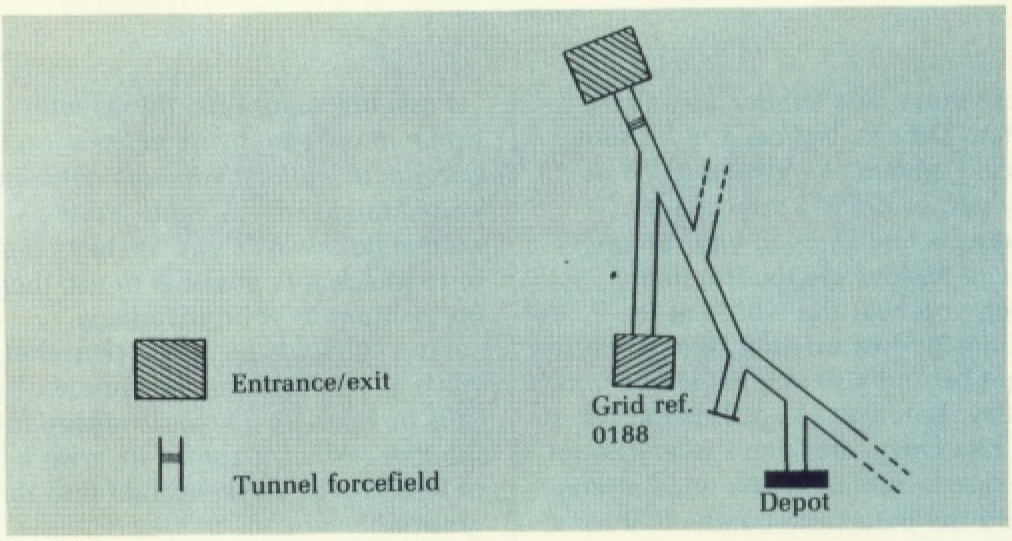
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trade. You will have to swap a space whale to get a flat diamond.

Once you have the neutron bomb built you need to get it to the space station. Use stardrive until the very last moment when approaching the space station to avoid Egron craft. Once the bomb is launched hit the Stardrive to escape or else the bomb will explode and kill you.

THE final tip this month comes from Trev Meredith, who has mastered Sunlogic's Jet. He says: Press 1 to select the scenario and then R for the skill level. Take off as normal but as soon as the enemy planes appear on radar use the M61. The score will advance very rapidly up to 600,000.

Another neat Jet trick is to use scenario 6 and select only AIM 9 and 7. Without altering attitude fire at ships as soon as any detail becomes visible, this will get you to level 8 where there is a surprise in store.



APOGEE

Max "The Hacks" Tennant is the master of game play. If you have a tip for a game send it to Max Tennant, Amiga Computing, 78-84 Ongar Road, Brentwood, Essex CM15 9BG. For every one we print we'll send you a game from the collection in our goodie drawer and a fabulous Konix Speedking, as used by all serious joystick jockies.

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Terrible trio hit the spot

THE Bitmap Brothers, like the Thompson Twins, are not really related. Mike Montgommery, Eric Matthews and Steve Kelly met through programming. Mike was project leader at Virgin where he worked with Eric on the Spectrum version of Scalextric.

Steve had also worked on a Spectrum driving game, Chequered Flag for Psion, but it was not until 16 bit computers arrived that they became siblings.

The first Bitmap Brothers game was Xenon, which was sold through Melbourne House, a label owned by Mastertronic which has now been bought by Virgin games. Most computer companies seem to exist inside one another like Russian dolls. Xenon was a huge success, helped by its appearance on the television programme Get Fresh.

They produced a special version for the telly where you only lost points for getting shot, and did not get killed. The time was limited, so you could only get to the end of level one. "Unfortunately all the games were recorded in a two day stint", says Mike, "and the kids realised that if they flew slowly they would avoid the big enemy at the end which would rob you of all the points you had won in the last few seconds. A poor but sly player could beat a brave, skilful one".

The success of Xenon attracted the big bucks from Mirrorsoft. Along with an offer of more money than the massed ranks of Melbourne House, Mastertronic and Virgin could muster came Mirrorsoft's new games label "The Image Works", which some people still think sounds more like a question than a name.

The game the fuss was over was



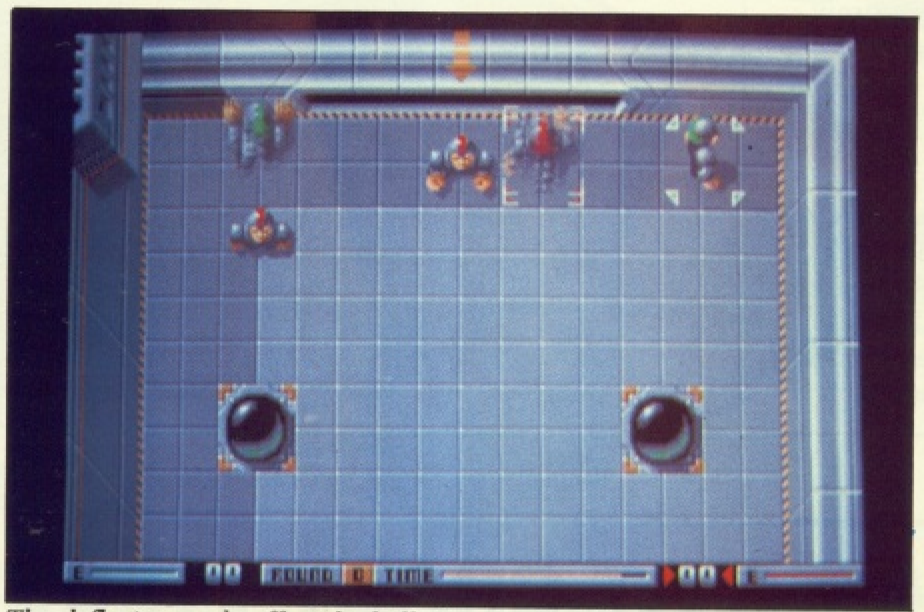
The Bitmap Brothers: Steve, Eric and Mike (left to right)

Are you ready to tackle Speedball? Simon Rockman talks to the programmers with spiked gloves

Speedball, a proper Amiga game. Yes, there is an ST version, but it lacks the finesse of the Commodore implementation. Only Amiga owners benefit from hardware scrolling and full screen overscan.

The playing area is three screens high and it takes up 592 by 160 bytes for each of the double buffered displays. A total of 186k screen ram.

No wonder the Bitmaps ran low on space; sound takes another 90k and the player sprites a further 80k. Obviously there wasn't enough room for the digitised picture which provided an entertaining start to Xenon.



The deflectors only affect the ball at ground level



You need to learn which statistics matter

The game "borrows" ideas from Rollerball, football and Mike's fave sport squash. "It is not", insists Eric, "metal men playing football". Still it does take place on a metal clad pitch and you play five a side. Your aim is to score goals either against the computer or a friend. When the instructions say that Speedball is a contact sport I don't think they mean clouting your sister with a joystick when she is winning.

Initially the controls look simple – eight direction joystick movements to move the player nearest to the ball around. But the fire button adds a degree of subtlety.

IF the player is in possession of the ball the length of time the button is held in determines the level of the throw. A short jab to fire at waist height or a mean grip to lob the ball over the heads of the enem... erm, opposition.

If you don't have possession and the ball is overhead, a touch of the fire button allows you to jump and grab the ball. Fire and a direction put you into a sliding tackle, which is a rapid way to move around the pitch, and is the move you should execute at kick off. When you have control of the goalie a touch on the fire button makes him dive.

Possession of the ball is all important. Learn to pass to avoid being tackled; if necessary, run back down the pitch and double back. Keep zig-zagging to avoid tackles. As in soccer, games are won or lost by the goalkeeper. When the screen scrolls to show your goal you gain control of Mr Goalie. This works in conjunction with the highlighted player, so you need to decide which of the two players you should be looking at. About half-way down the bottom screen is where Mike switches over.

The goalkeeper cannot hold the ball but can lob it upfield. Learn how the ball bounces. Shots which bounce off the side walls can be very difficult to save – a useful tactic for offence. Almost as useful as taking out the opposing goalkeeper.

In this game of the 21st Century it is not considered bad form to foul the goalkeeper and an aggressive tackle will knock him out of the area.

Other tactics are less overt. A number of tokens appear on the screen in the form of spinning tiles. With 16 frames of animation for each, they look great, and the effect is even better. A tiled marked D will decrease your opponent's stamina, while S will increase yours. Running over a mine yields eight death dealing balls which will knock out enemy players, whereas an E will only produce one hostile ball moving in the same direction as your player.

A G gives your player the ball. Keeping it is important, so picking up a P is useful because that gives you 10 seconds during which you are protected from being tackled. Trashing the oppos is easier if you grab a question mark which will slow them down or an F which will freeze them.

In a two player game you can baffle your brother by running over a letter J.

This reverses the way his joystick works.

THE most common kind of token bears a red square. These can be collected like Esso tiger tokens and redeemed at the end of a game. Two tokens are sufficient to bribe the official. This makes the next game last longer.

For three tokens you can either buy extra stamina (Ben Johnson – watch out) or bribe the timer. This makes the tokens stay on the screen longer.

With four tokens saved you can nobble your foes by bribing their trainer or reducing their stamina, which in turn reduces the speed of their moves. Four tokens will buy you extra stamina.

Either by saving up from previous games or by some extra nifty footwork, you could have gathered six tokens. This buys extra power for you, reduces the opponents' skill, or best of all allows you to bribe the ref. This means you start one goal up in the next game.

A full house of seven tokens can be ►

◄

swapped for a reduction of the enemy's power. This means they can't throw the ball as far as you can.

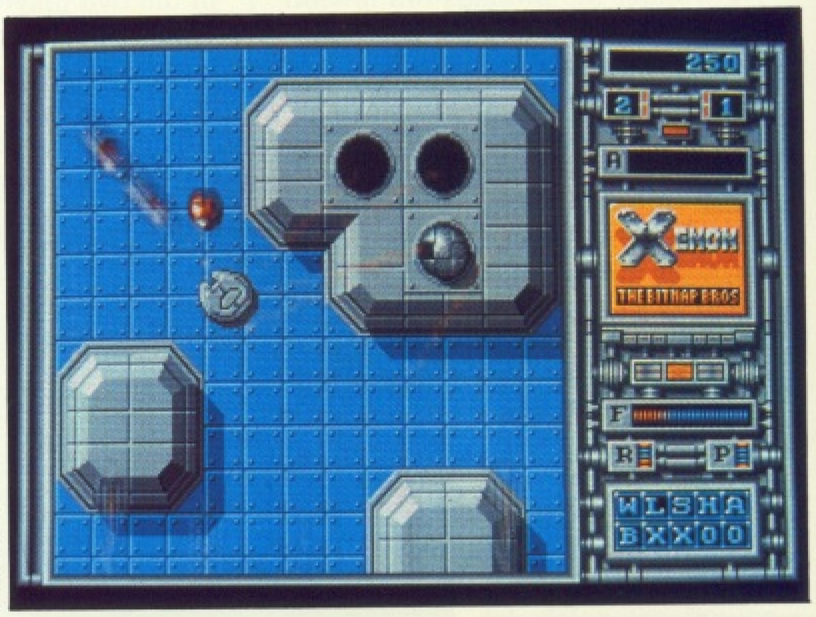
You can either play against a friend, in a league or as a knockout. Speedball is best as a two-player game. A modem option was ruled out, but may feature in the next Bitmap Brothers game.

The knockout is a progressive way to play. The opposition gets harder as you win more matches. Each round is played as a best of three, with two points for a win and one for a draw. Three points are needed to get through.

IT is possible to finish, for which you are rewarded with a special message from the Bitmaps. However it takes a lot of practice, only one of Mirrosoft's skilled games testers has managed this feat. A league match offers you the chance to assess your ability against all the other teams with opponents drawn at random. I spent far too long at the bottom.

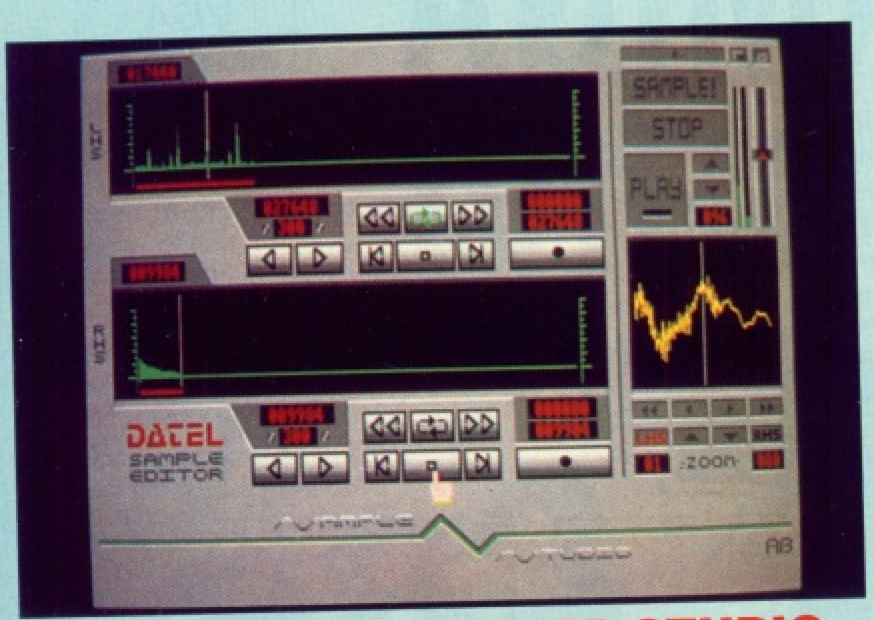
Speedball heads up an amazing array of Image Works products – Bombuzal, Fernandez Must Die and Rocket Ranger. While the Bitmaps refused to say much about their next project.

If you have a modem you could try asking for yourself. The Bitmap Brothers BBS is on 0245 413728. Getting a meaningful answer might be difficult, but you'll have fun on the board.



Speedball bears a family resemblance to Xenon

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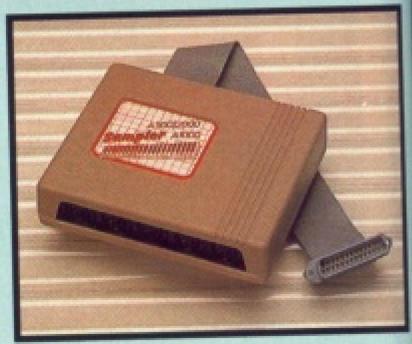
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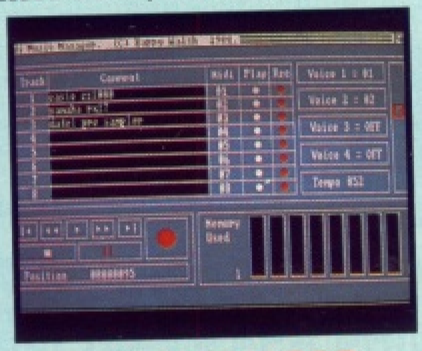
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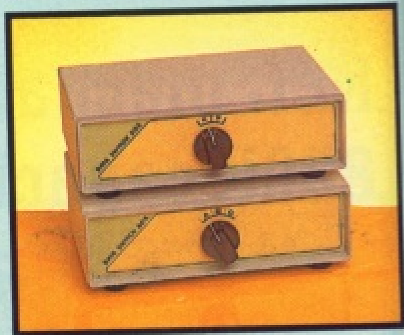
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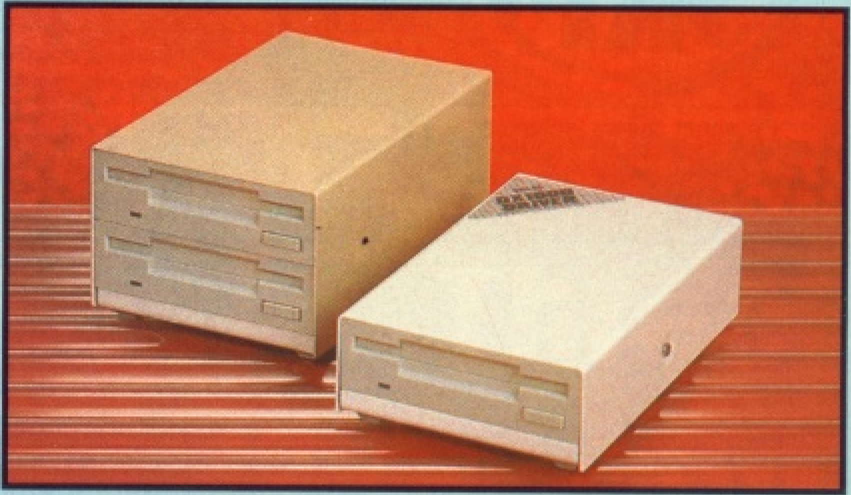
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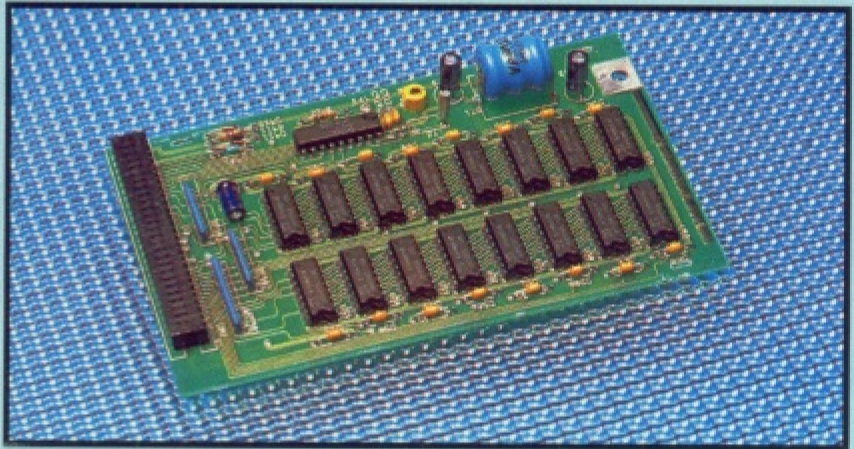
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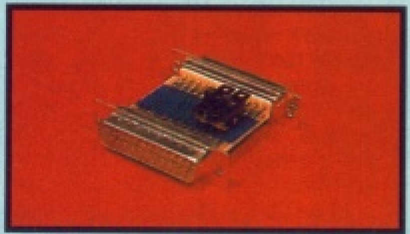
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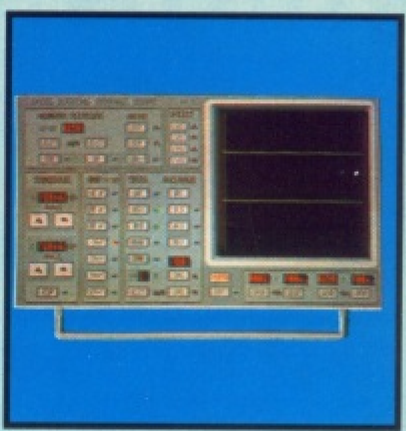
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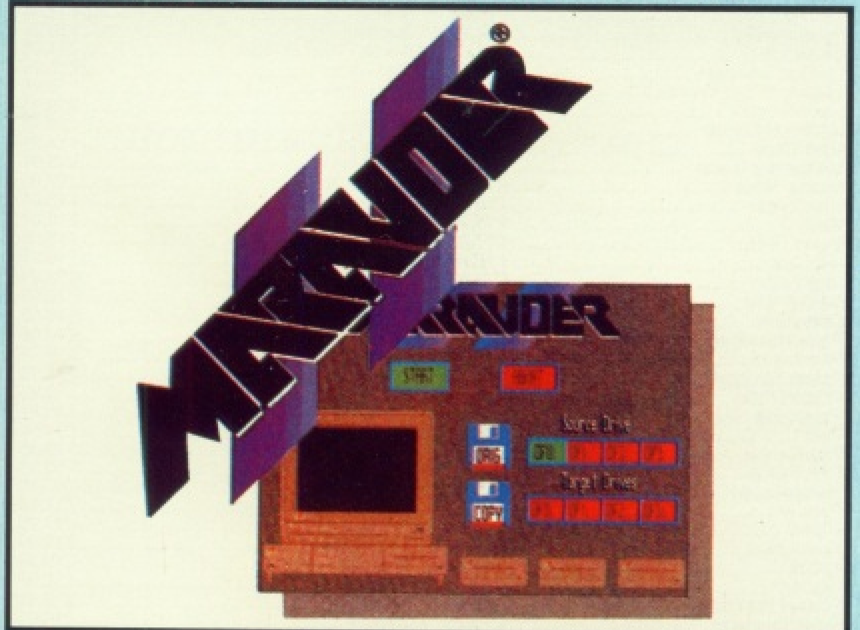
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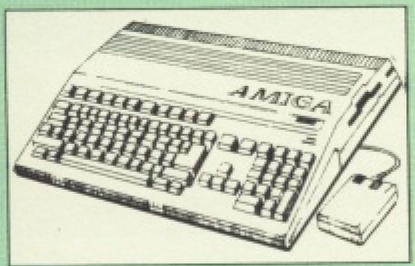
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VISA



Three (or four) tasks into one Amiga will go

Phil South takes us into one of the most important functions of the AmigaDos command line interface

IT is not surprising that no one has much experience of true multitasking, for the Amiga is the first micro to offer it as a feature. There's so much to the Amiga as far as graphics and sound are concerned, that the productivity consequent on running more than one program at once has tended to take a back seat. But, if you do more on your Amiga than play games, you can't do without multitasking.

How do you use the system in a multitasking format? As you probably realise, every program you use on the Amiga is in its own window, which acts like the screen display on any other computer. On the Amiga you can have several programs stacked up on your screen like a deck of cards. You can click back and forth between windows and programs by using the To back and To front gadgets on each window.

The commands you can use are RUN, NEWCLI and the keypresses which simulate Workbench mouse button selections: Left Amiga/M sends the current screen to the back, Left Amiga/N brings the current screen to the front, Left Amiga/V selects CANCEL in a requester, Left Amiga/B selects RETRY, in a requester.

THE basic rule about multitasking is you can run ANY programs together, provided you have enough memory. You can launch applications in AmigaDos in a number of ways. You either click the appropriate icon in the Workbench screen, which is itself just a program with its own screen, or you can type the name of the program in a CLI.

If you type NEWCLI a new window opens with a 2> prompt instead of the original 1>. This means that the new CLI window is task 2. Each window you open, each program, is a task which the Amiga serves with resources as required, hence the term multitasking if you are running more than one program at once.

Anything you type in this new window will be acted upon in the same way as any information typed into the first window.

You can use each window separately or run two processes simultaneously. For example, you could run a spelling checker over a text file in one window while

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accessing the disc to get a directory in the other.

Open up another window, and you could be copying the contents of this same disc to RAM: while the other tasks are proceeding. Obviously they'll be queuing up for use of the disc drive, the resource in use, but they'll wait their turn and then perform the task allotted them.

The next way to use this facility is to use the word RUN when launching a program. This opens a new window and executes a program automatically, just as if you'd opened the window yourself and typed the name of the program.

The last way of entering the multitasking environment involves either the CLI or Workbench. You can double click on a program icon to start it, then send that screen behind the Workbench and launch the application again. You can shuffle the windows on your screen, and resize them so you have the same application running twice.

This ability to run the same program twice, with each version believing itself to have complete control over the computer, is unique to the Amiga. It is best with text-based applications. Although the game Tracers from Activison will multitask, it is best left to word processors, adventure games, text editors and programming languages.

THIS way you can cut and paste information between the applications without time wasted powering down and booting up again. The only real limits on how many tasks you can run are the amount of ram and the time you are prepared to wait for them, as things slow down considerably.

I'd be interested to hear anybody's interesting multitasking stories, especially any unique uses or techniques you find useful. Write to me with all your AmigaDos and CLI problems: Phil South, Amiga Computing, 78-84 Ongar Road, Brentwood, Essex, CM15 9BG.

IF ALL ELSE FAILS

If you ever get jammed up, and something you've actioned doesn't happen, search all the open windows, either by clicking the gadgets or by the Left Amiga keys. You may find that there is a CANCEL RETRY requestor or even an error message. These must be answered before you can continue.

If you still can't get anything going you've just got your resources in a twist. You'll have to shut down.

Try using one of the public domain utilities, like GOMF to prevent gurus from being terminal, and a monitor program to chart memory usage. They can save you a lot of trouble when putting the Amiga under stress by loading up the tasks.

AMIGA Letters

Forgotten memories

I AM puzzled about the memory management of the A500. The memory map shows there is 16 meg in the Amiga. If there is only 512k of ram available to the programmer what is the other 15 meg used for?

Also, where are the "magic" locations in the Amiga? The Commodore 64 has chunks of memory that control sprites, graphics and sound (VIC II and SID chips) but where are similar locations in the A500's memory and what should be poked into them to get results? Finally, could you explain how ray tracing works?

Dean McCabe, Dundee, Scotland.

Ah! an ex-C64 user. The 68000 processor in the Amiga can address 16 megabytes. However the Amiga itself can only use 9 meg because of positioning of the custom chips and rom in memory. These need some of the address space so that the 68000 can talk to them.

The reason that only 512k is available to the programmer is that is all Commodore fits as standard. You can upgrade it to 1Mb by using an A501 board, or if you had an Amiga 2000 you would start with 1Mb and be able to upgrade to 9Mb.

Poking is a system of using a machine which has Basic in place of an operating system. All the "magic" effects should be controlled from Basic by using proper keywords. Commodore brought out the dreadful Simon's Basic cartridge for the 64 to do this. With the Amiga Commodore has got things right. Study the Amiga Basic book and you will see that you don't need to poke.

Ray tracing is a technique which calculates the way objects react to light. If you drew a white cube on the screen and imagined that it was lit from one side the opposite side would be black and the top grey. A proper ray tracing program calculates this and can also work out the effects of metallic surfaces, glass and textured materials.

Have a look at the reviews of ray tracing programs in Amiga Computing *to see what can be done*

Which printer?

I AM going to buy an Amiga A500 and a colour printer. After reading your review on the Star LC-10 and the Okimate 20 in the July edition, I think that the Star LC-10 would be the best machine for my requirements.

The trouble is that the LC-10 is not available from the stores. Instead, I have been offered the Commodore printer – the MPS 1500C – with the Amiga. Having also read about the shortage of ribbons for the printer I am not sure this is wise.

In the Amiga A500 brochure of May 1987 there is a photograph of the MPS 2000C colour printer, yet when I ask at the computer stores nobody can tell me what it is, let alone get their hands on it.

Robert Steward, Wolverhampton.

We would still recommend the Star. Call around a few dealers, you should find someone who has an LC-10 in stock. Both the printers are nine pin and look pretty equal on paper, although we've not seen the Commodore model. The MPS 2000C is no longer available.

Write to: The Editor, Amiga Computing, 78-84 Ongar Road, Brentwood, Essex, CM15 9BG. We'll send the writer of the best letter each month a program from our goodie drawer.

Which Amiga?

HAVING just sold my Commodore 64, I want an Amiga for Christmas and I know that they are very expensive machines so I am trying to find which is the best package to get.

I know there are business packages and ones which include monitors (which I can't afford) and there are just plain packages which contain the Amiga and DPaint.

My query is about the modulator: Is it standard in all packages which don't contain monitors? Does a modulator give a picture as good as a monitor?

Spencer Smith, Stockton-on-Tees

A modulated picture will not look as good as one on a monitor. If your television has a Scart connector on the back you won't need a modulator and the picture will approach the quality of that on a monitor. For most televisions you will need to buy an A521 modulator, which costs about £25. Ignore the business packages – a first look at the Digita Home Accounts package shows it reasonably good but we suspect you want to play games. Go for an A500 – which comes with Basic and DPaint – and a modulator if you need it.

New Kickstart

I HAVE recently bought a second-hand Amiga 1000 and I am confused as to whether it is compatible with the Amiga 500. I have spoken to a

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number of Amiga 500 users and from what they said it appears to me that the A500 has a built-in operating system, version 1.2. Whereas my A1000 loads in the operating system, version 1.1 from the Kickstart disc. Is this true?

What is the difference between V1.1 and V1.2 operating systems? Do I have to get V1.2 to get compatibility with the A500? If so how do I get V1.2 for my computer? On another Kickstart disc?

Damian Watts,
London.

Your local Commodore dealer should be able to order a 1.2 upgrade kit for you. He may have difficulty in getting hold of one, in which case you should contact Commodore direct on 0628 770088.

The Amiga 500 has Kickstart 1.2, but the greatest advantage of the 1000 is the ability to load whichever Kickstart you want. Version 1.3 will be available soon, and while A500 owners will have to open up their machines to fit a new chip you only need to start the day with a new disc.

Blown chips

COULD you please supply me with the name and address of a company which supplies an Eprom programmer for the Amiga A500? It must be able to read, write to and save to the common range of eproms: 2764, 27128, 27256. The programmer only needs to read hex format.

Andrew Wyllie,
Norfolk.

Merlin Computer, Industriestr. 26, 6236 Eschborn, West Germany can fulfil your needs

IV is dead. Long live CBT

I READ with great interest the article on interactive video in September's issue of *Amiga Computing*. I work for a training establishment which after investigating IV video decided that it did not meet our training requirements. As most subjects demand constant updates and changes to reflect modification states, the expense of filming these changes rules out video disc as a medium.

Good graphics and the ability to manipulate these in a variety of ways was the major consideration, and it was decided that Commodore Amiga, DPaint II and AAAE – or in the beginning Microtext – were the tools required to meet the task.

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Roy Stephenson,
Preston.





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Screen shots from Atari ST version







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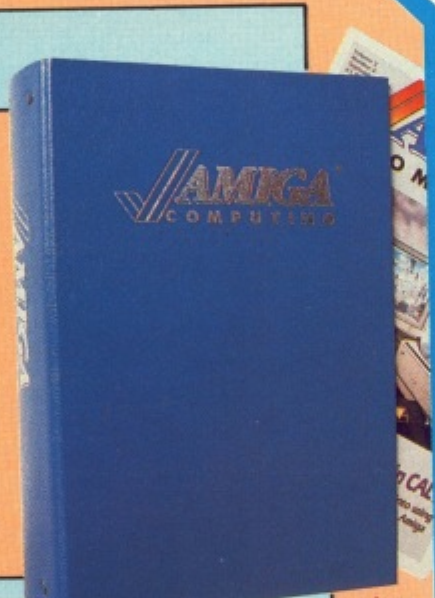
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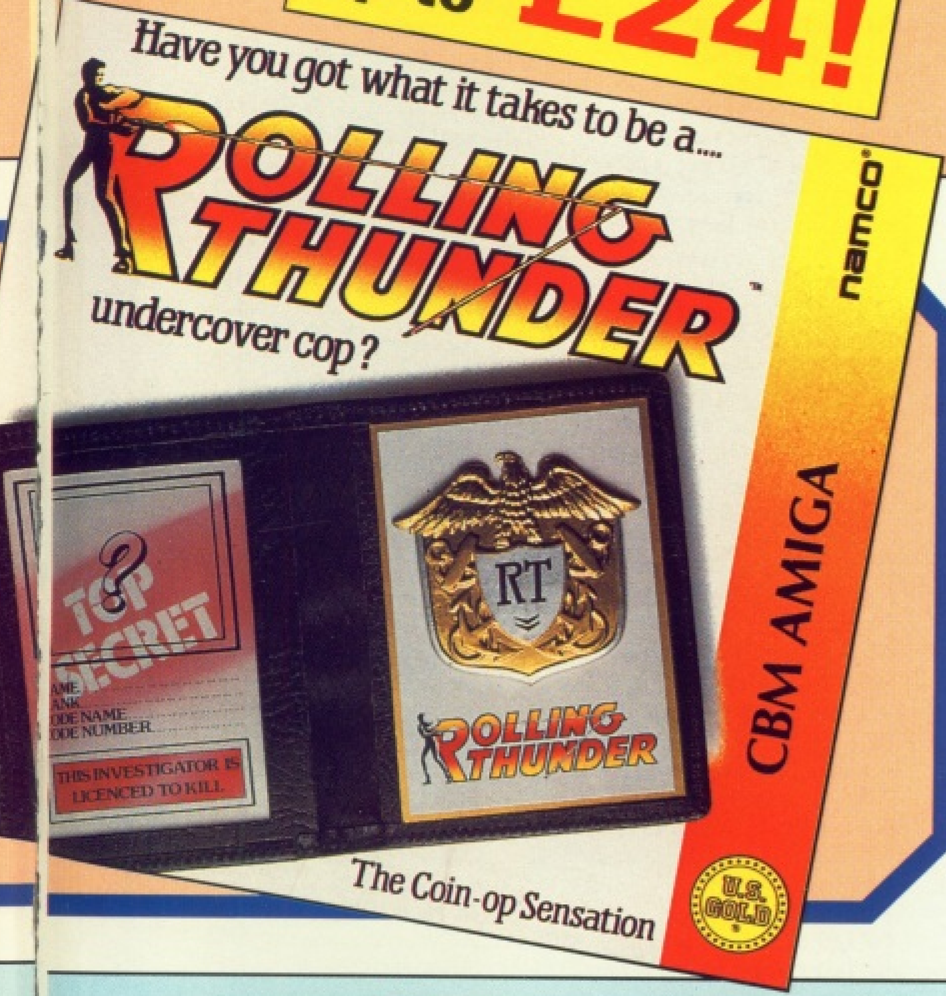
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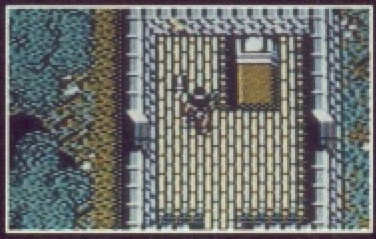
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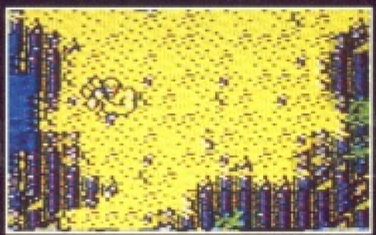
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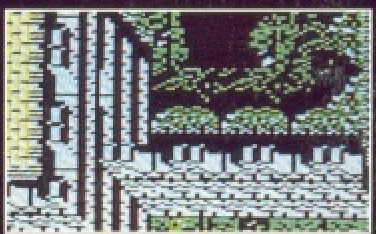
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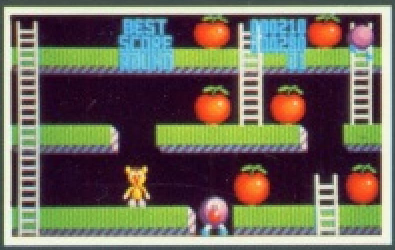
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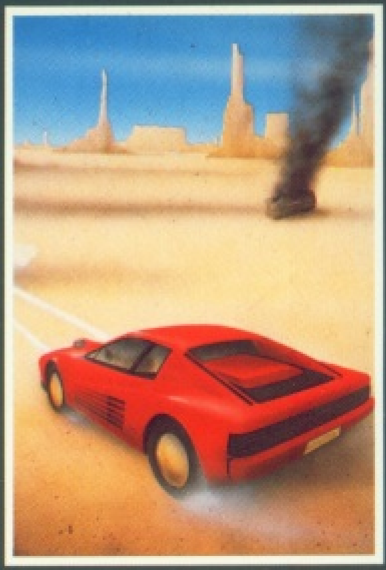


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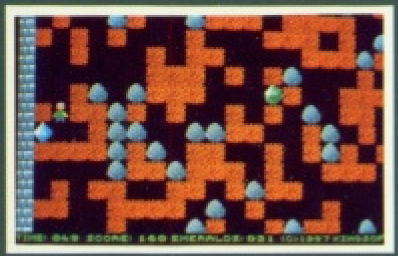




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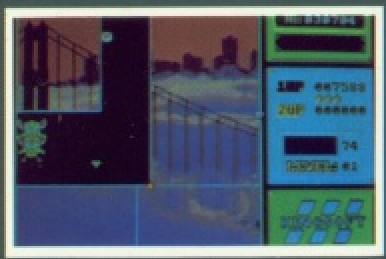




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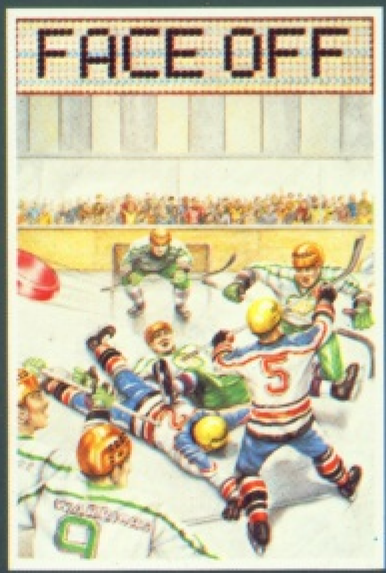
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